VOL. XXXVIII No. 5 MAY 1953

MECCANO MAGAZINE

SPEED UNDER SAIL

1/-

THE MECCANO MAGAZINE

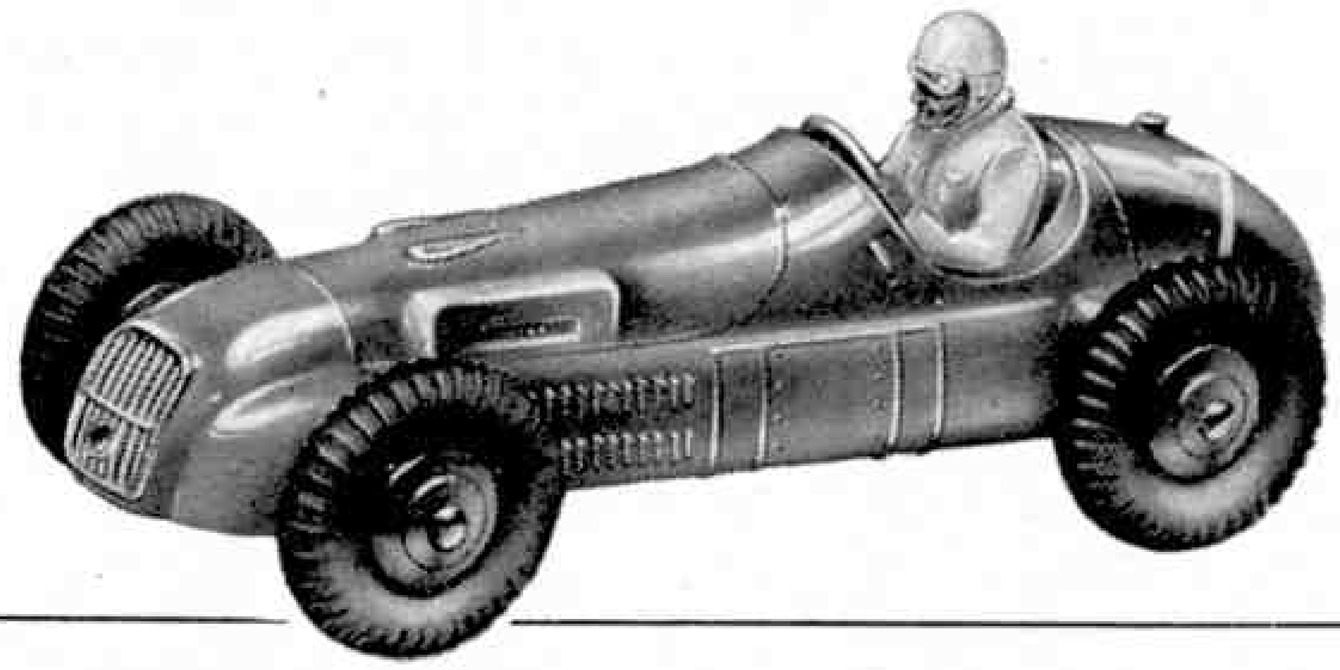
NEW

DINKY TOYS

TRADE MARK REGD

Ready during May

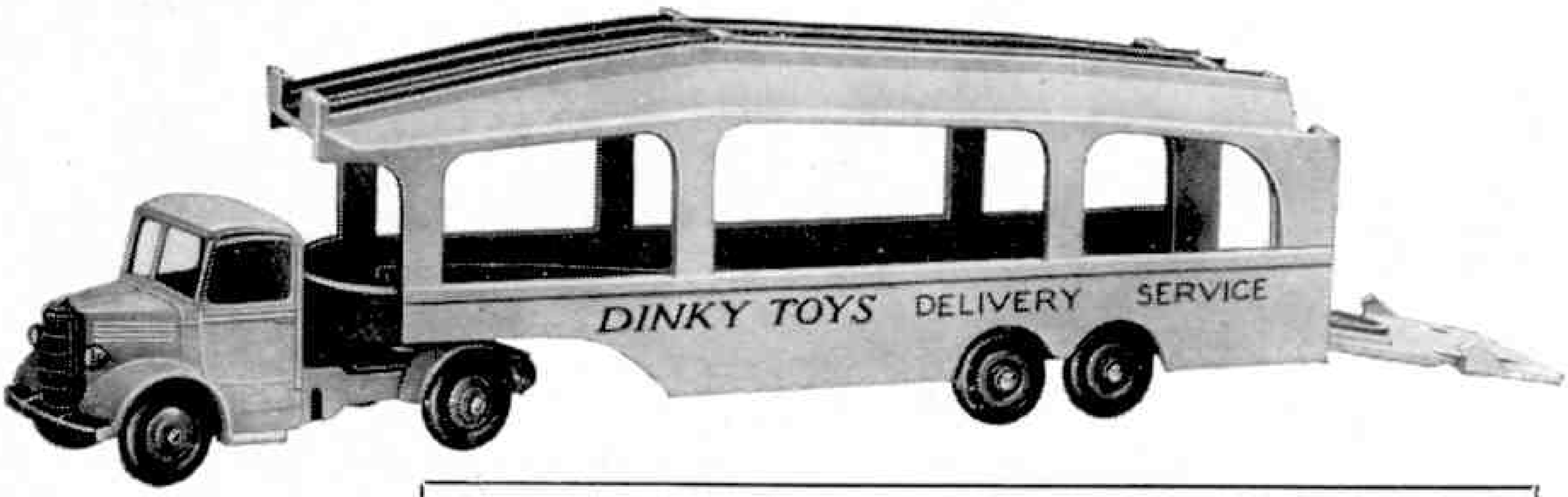
A special article dealing with these new models will appear in the June "M.M."



H.W.M. RACING CAR No. 23j

The fleet of Dinky Toys racing cars is growing steadily and here is a worthy newcomer that will be as popular as the Alfa Romeo, Cooper-Bristol and Ferrari models. It is a miniature of the H.W.M., a British-built racer with an engine of 2-litre capacity that has many successes to its credit.

The Dinky Toys H.W.M. Racing Car is 3⅞ in. in length. It is finished in light green, and is complete with driver in white racing kit



PULLMORE CAR TRANSPORTER No. 582

A thrilling new Dinky Toy to play with. It is accurately modelled on an actual articulated vehicle used by manufacturers for conveying motor cars from factory to docks for shipment overseas, and it can carry four Dinky Toys passenger cars—two inside and two on top. A hinged ramp at the rear provides access to the interior.

The length of this car transporter with the ramp down is 11¾ in. The colour scheme is attractive light blue for body with brown for the runways

MADE IN ENGLAND BY MECCANO LIMITED

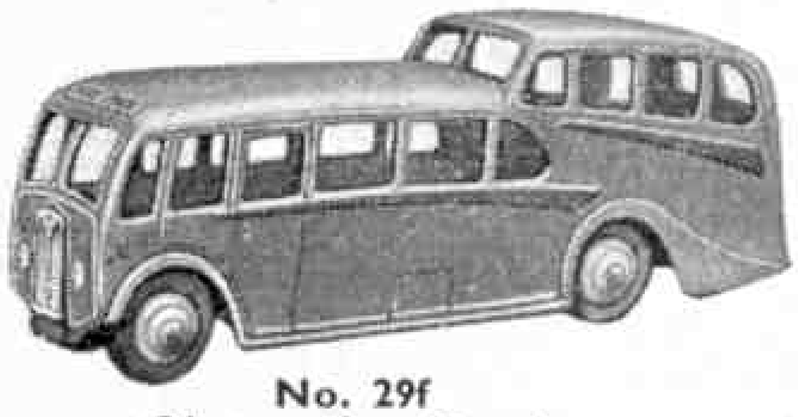
DINKY TOYS

TRADE MARK REGD.

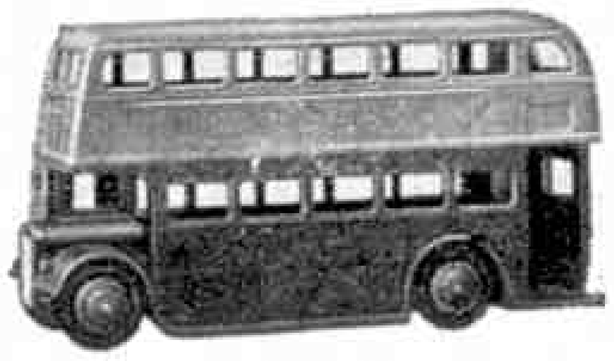
No. 40f
Hillman "Minx"
Length 3$\frac{3}{16}$ in.

No. 140a
Austin "Atlantic" Convertible
Length 3$\frac{3}{8}$ in.

No. 140b
Rover 75 Saloon
Length 3$\frac{7}{8}$ in.

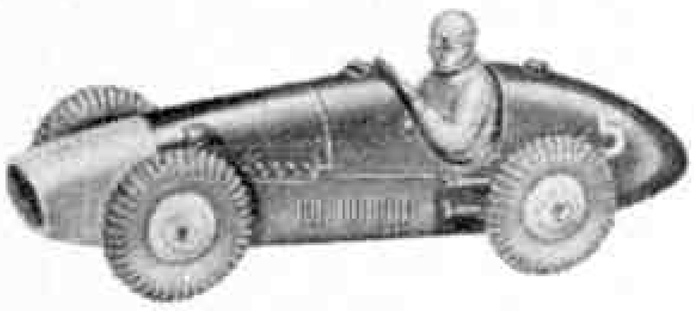


No. 29f
Observation Coach
Length 4$\frac{3}{16}$ in.



No. 29c
Double Deck Bus
Length 4 in.

No. 25x
Breakdown Lorry
Length 4$\frac{3}{4}$ in.

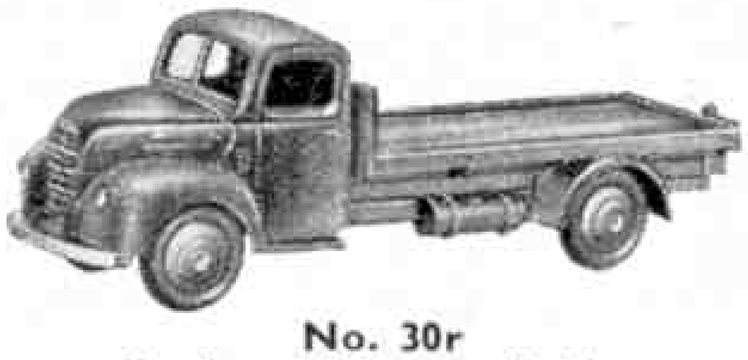


No. 23h
Ferrari Racing Car
Length 3$\frac{7}{8}$ in.

No. 23g
Cooper-Bristol Racing Car
Length 3$\frac{1}{2}$ in.

No. 23f
Alfa Romeo Racing Car
Length 4 in.

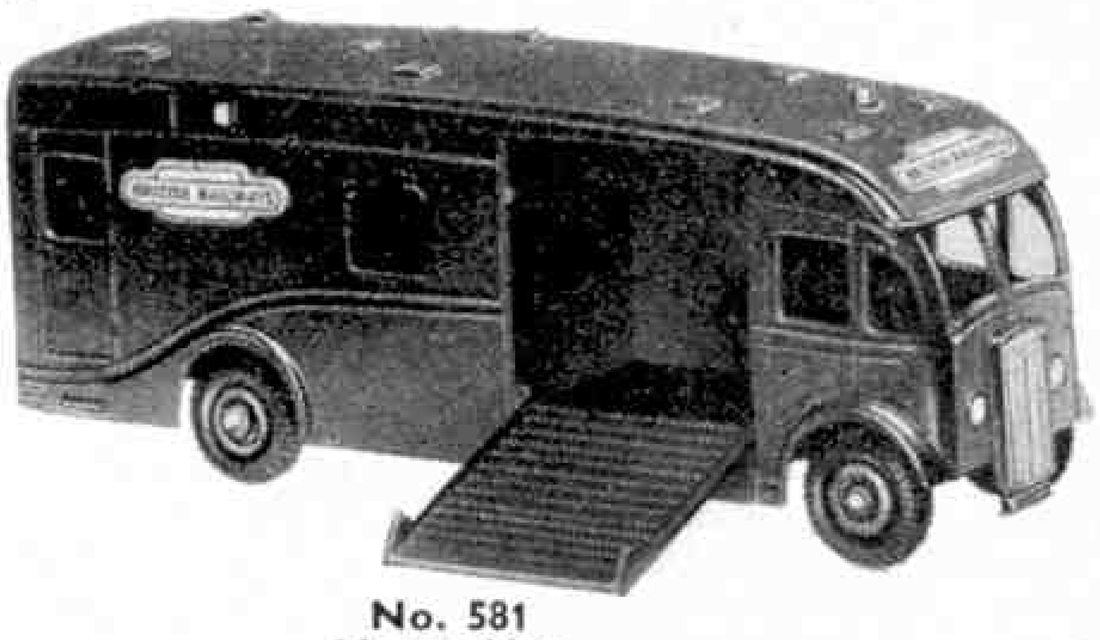
No. 34c
Loud Speaker Van
Length 3$\frac{1}{4}$ in.



No. 30r
Fordson "Thames" Flat Truck
Length 4$\frac{1}{8}$ in.

No. 30h
Daimler Ambulance
Length 3$\frac{1}{4}$ in.

Fire Engine with Extending Ladder
No. 555
Length 5$\frac{3}{16}$ in.



No. 581
Horse Van
Length 6$\frac{1}{4}$ in.

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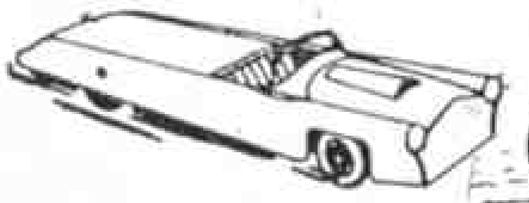
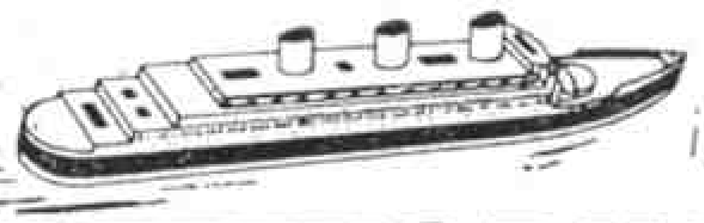
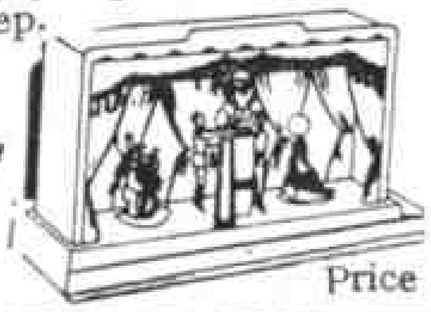


2. R.M.S. QUEEN MARY — accurate scale model of world-famous luxury liner. Completed model is self-powered by simple elastic mechanism. When completed: 21 in. long; 2¾ in. wide; 3¾ in. high.



3. STAGE CIRCUS — with musical clown, acrobats, performing animals—and each actually **works** from simple hand-operated back-stage mechanism. Completed model: 19 in. high; 13½ in. long; 3 in. deep.



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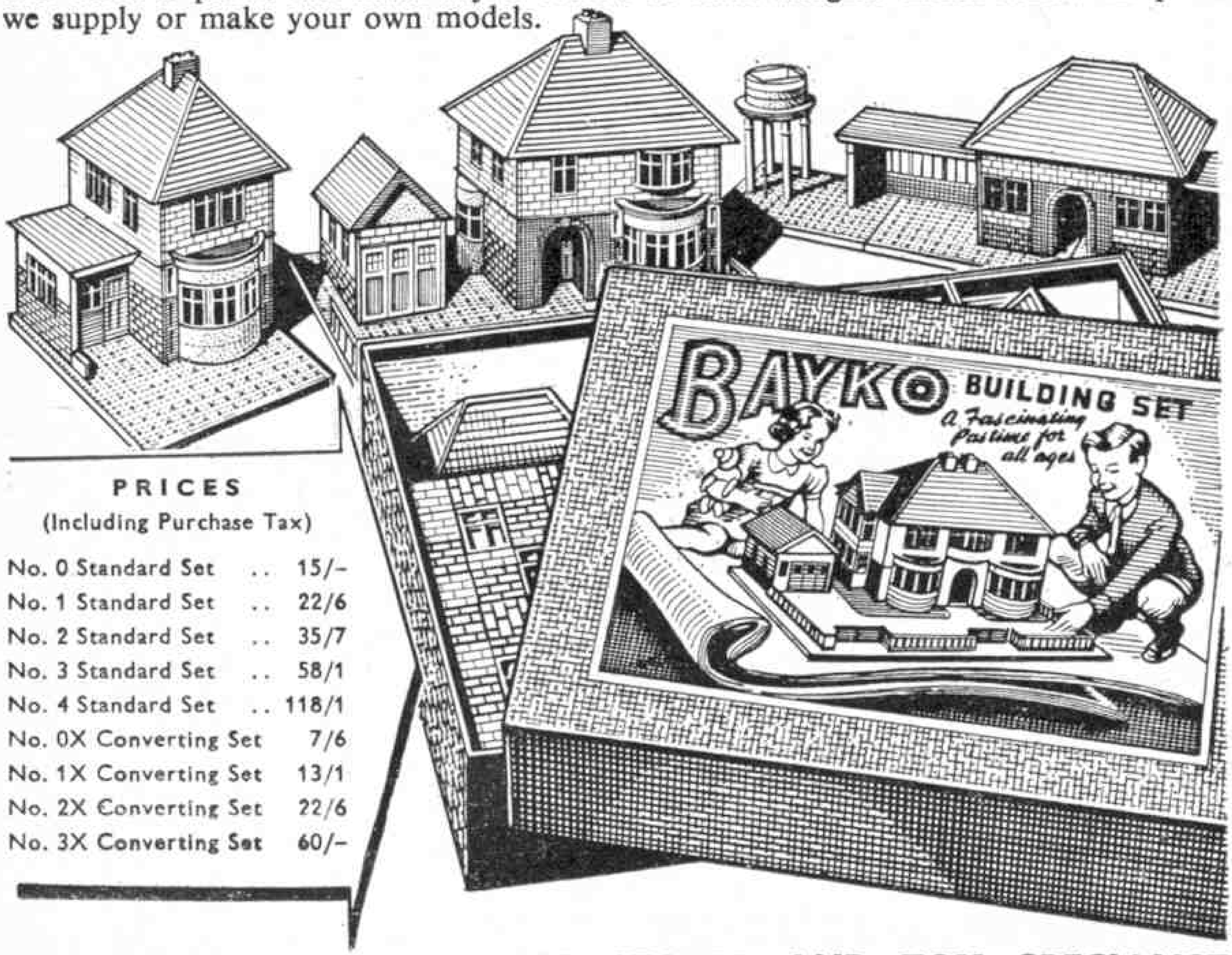

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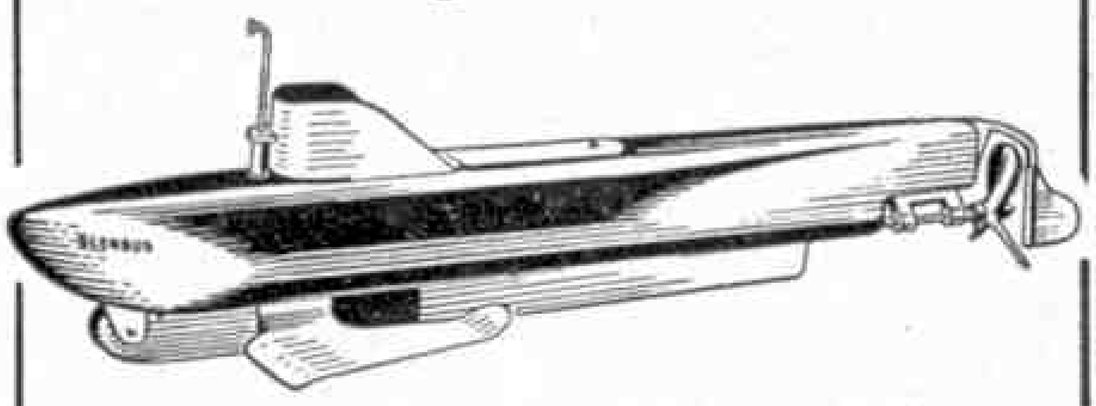

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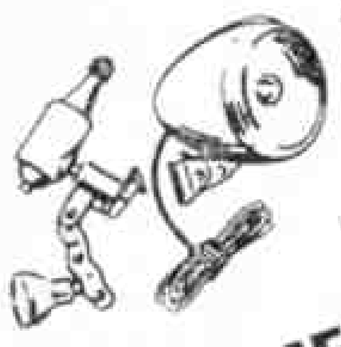

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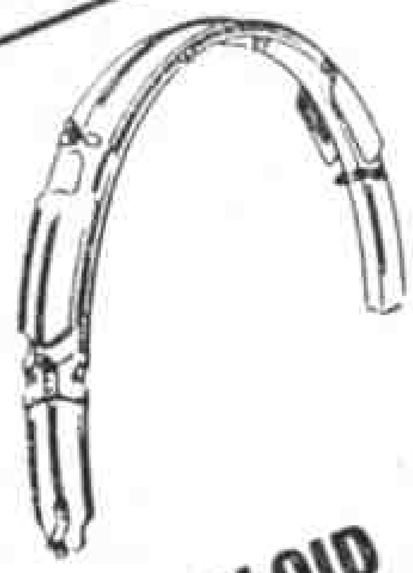

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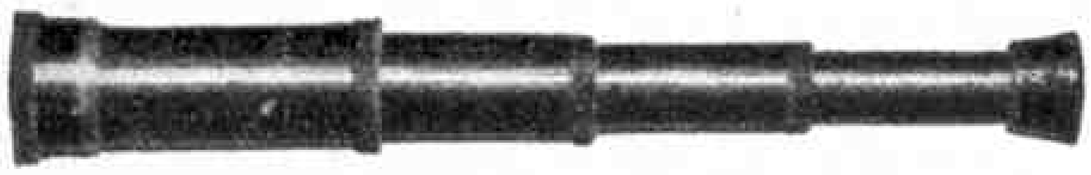

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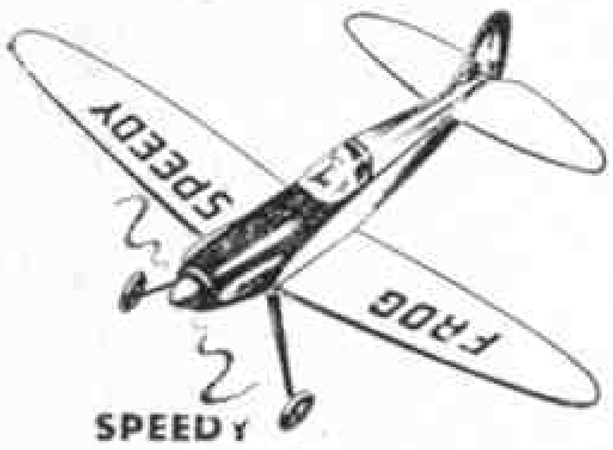
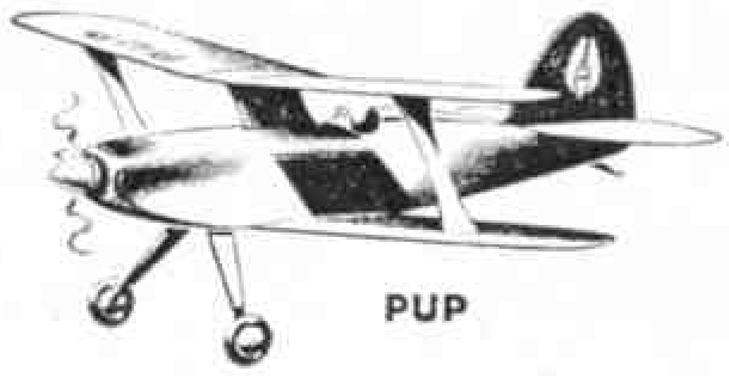


SPEEDY



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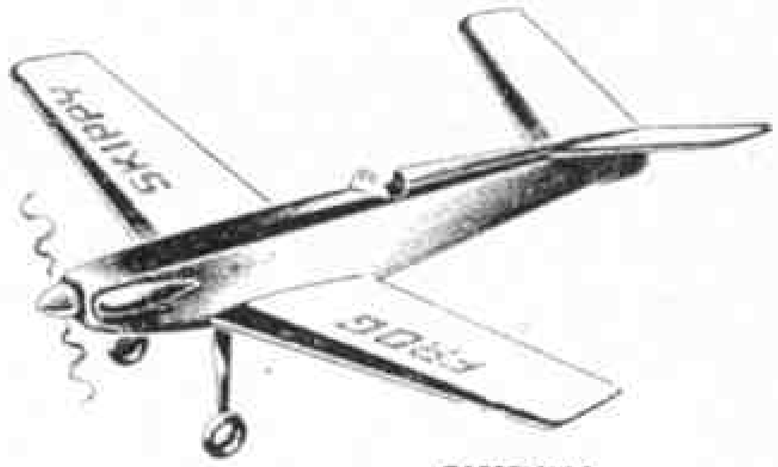

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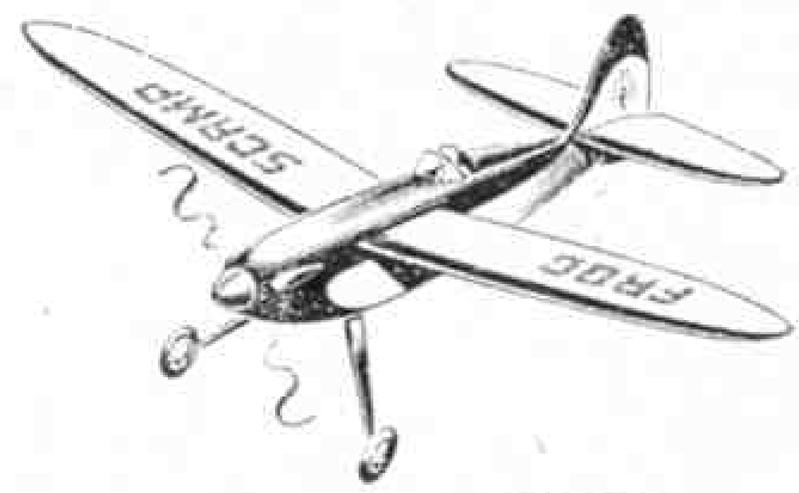

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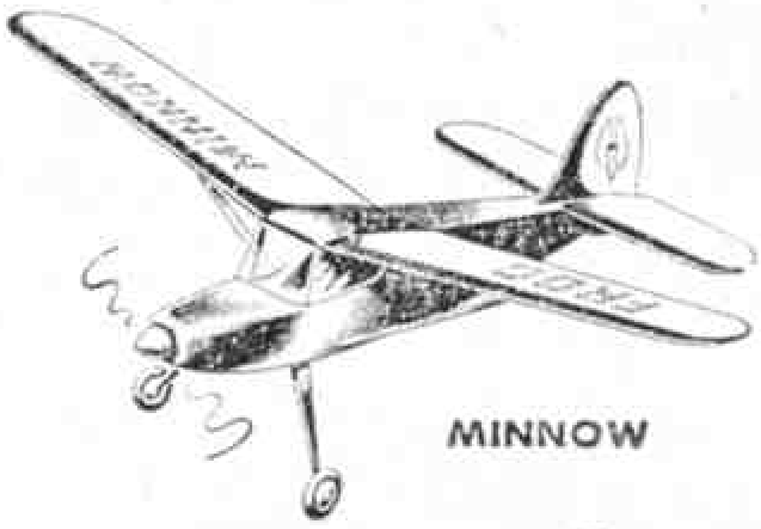

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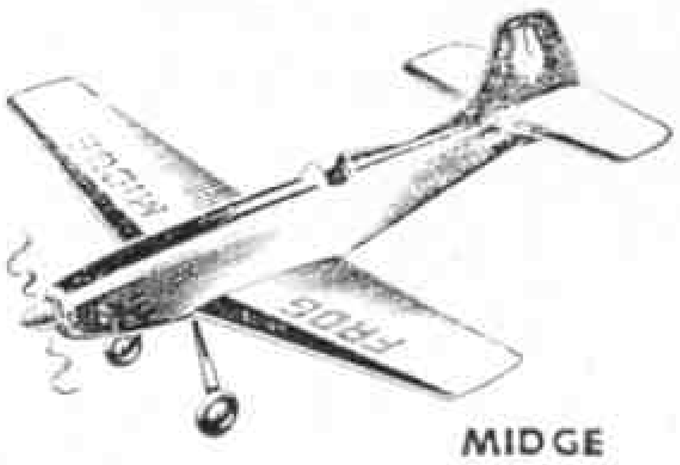

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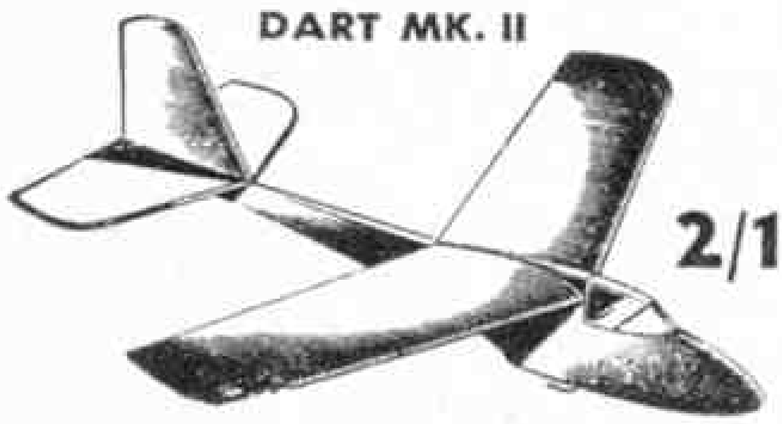
DART MK. II

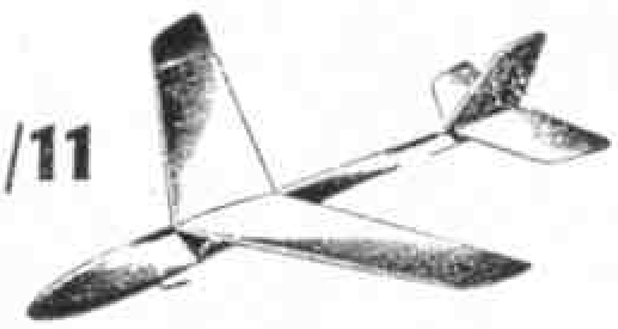


2/11

Dart Mk. II. A new swept-wing hand or catapult launched glider with a wonderful performance. Span 15 in.

WASP

1/11



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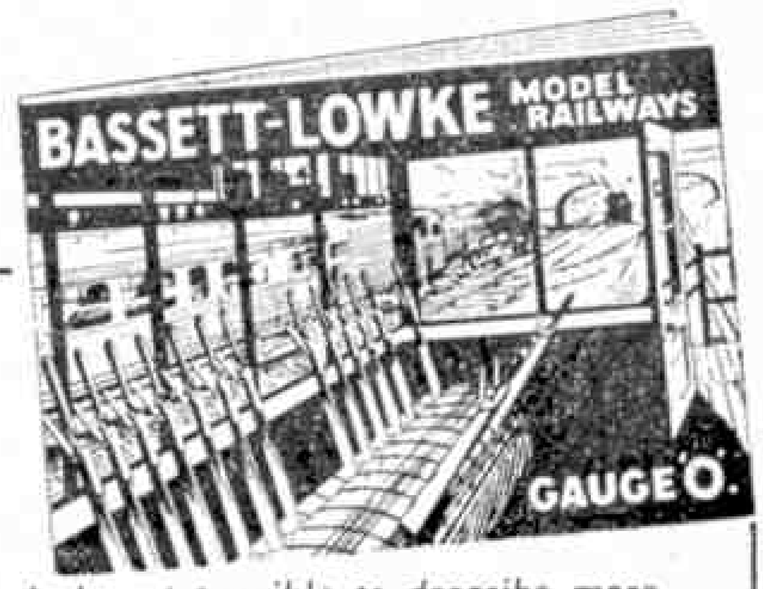

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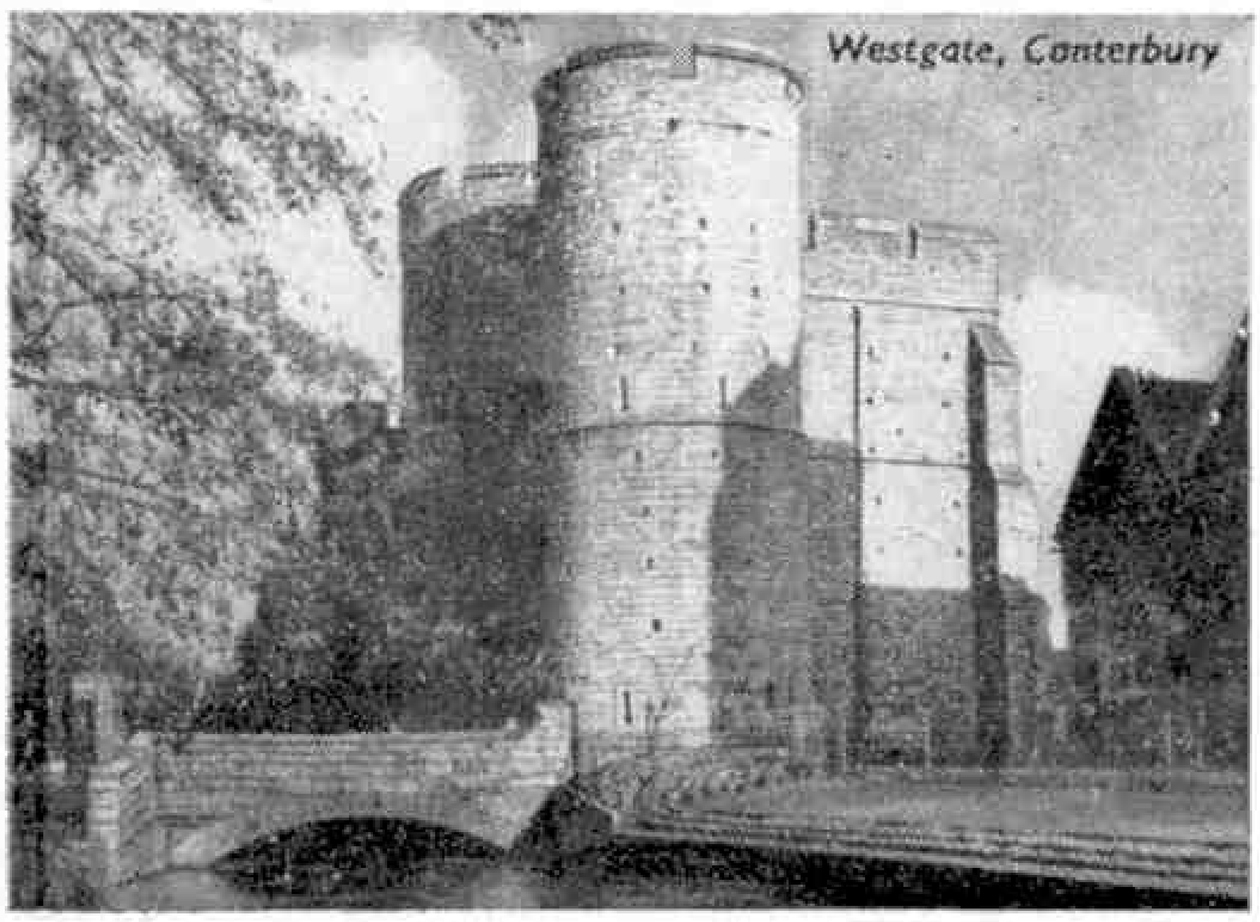

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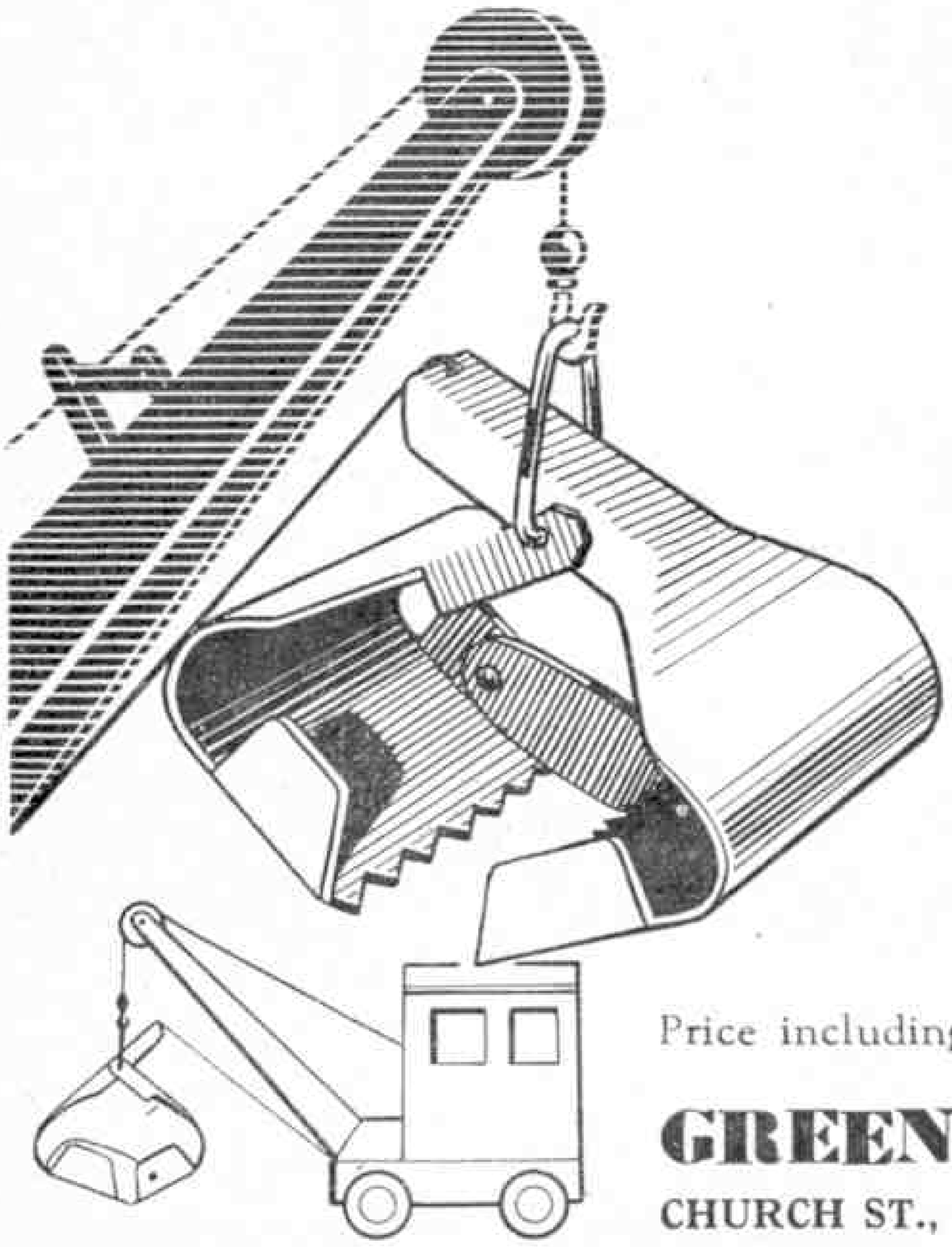
in margin .....X.V.G./May 53.



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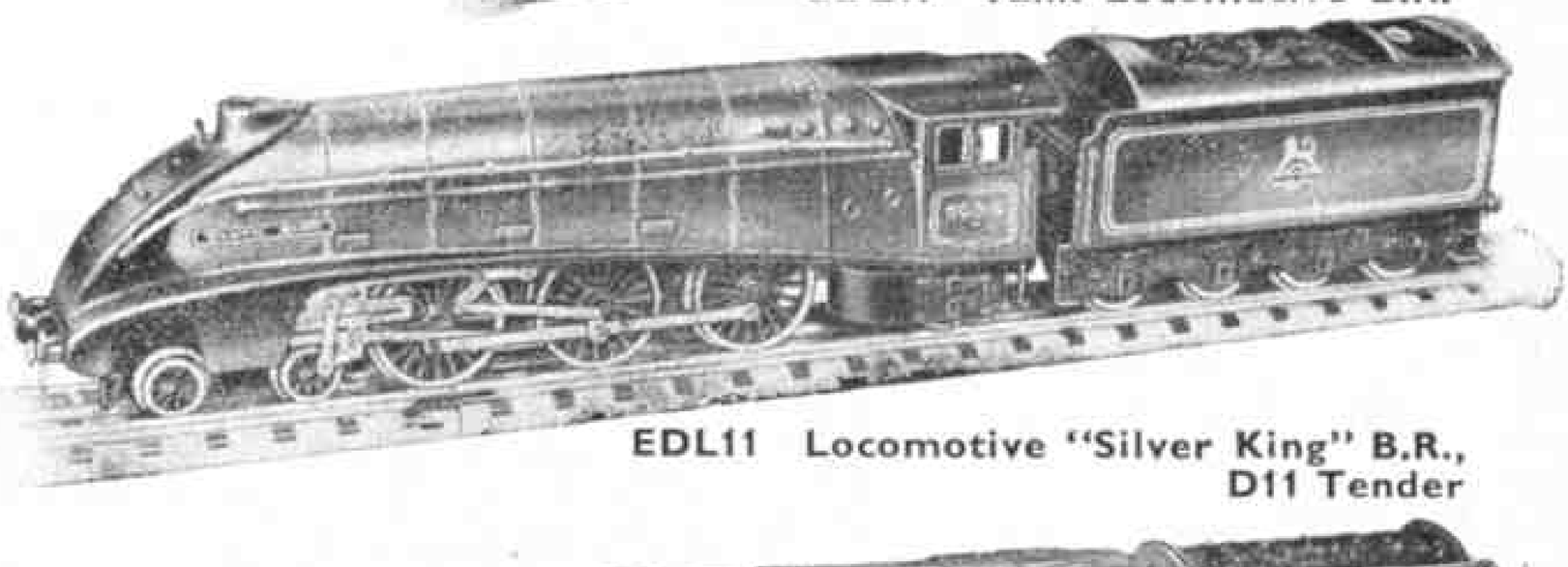
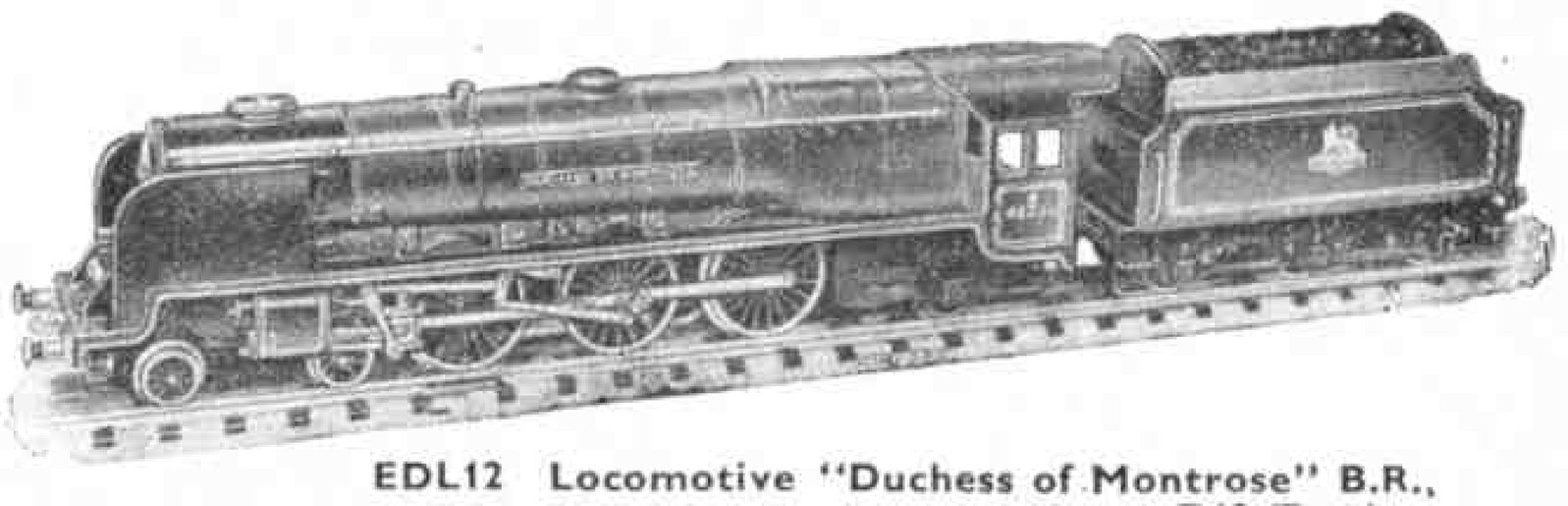
1953 MODELS IN B.R. LIVERY

The full range of Hornby-Dublo locomotives and rolling stock will be produced in British Railways markings and colours. In black with red and grey lining, the 0-6-2 tank locomotive looks most businesslike, and the green finish with orange lining is well suited to both the A4 class streamlined locomotive "Silver King" and the 4-6-2 locomotive "Duchess of Montrose." Smoke deflectors are fitted to the latter model, adding realism to its appearance. In their new finish Hornby-Dublo trains have a greater appeal than ever.

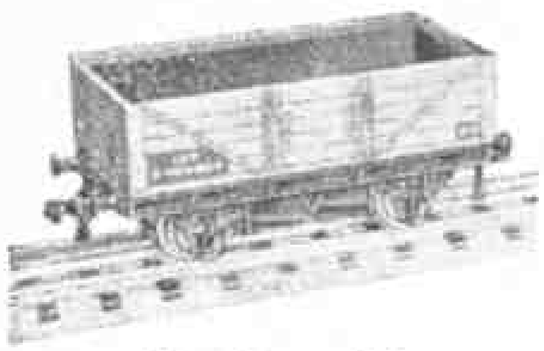
EDL17 Tank Locomotive B.R.



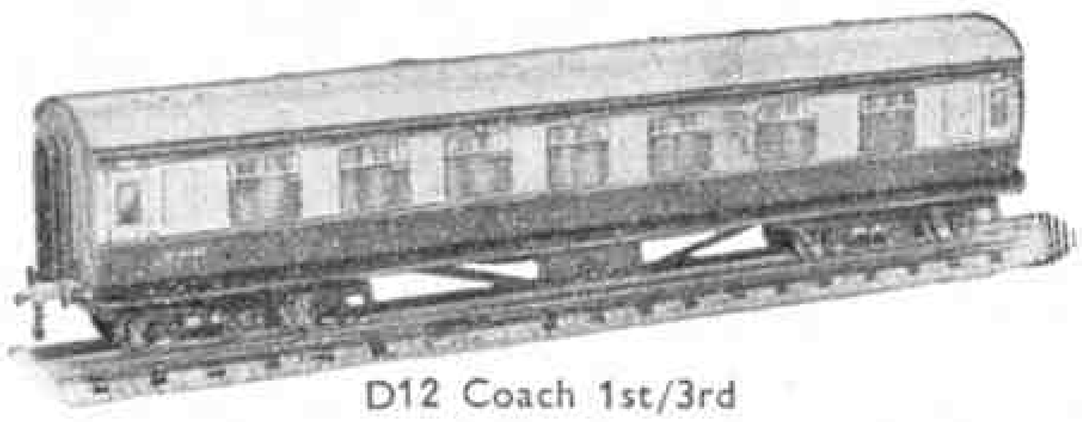
EDL11 Locomotive "Silver King" B.R., D11 Tender



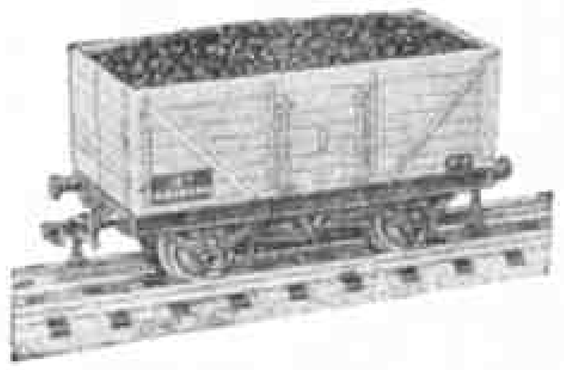
EDL12 Locomotive "Duchess of Montrose" B.R., D12 Tender



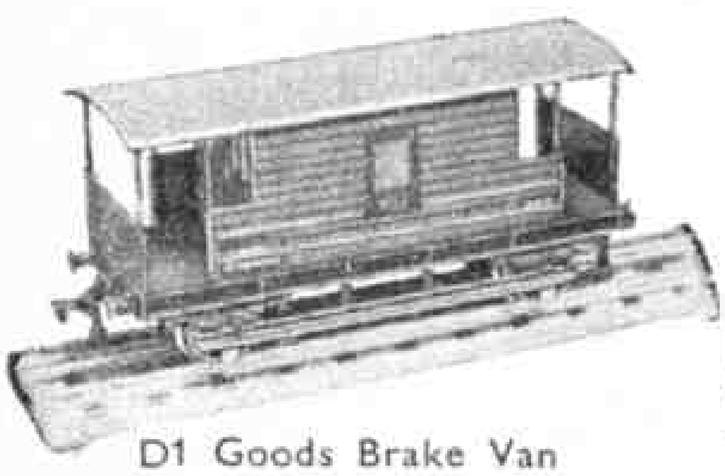
D1 Open Wagon



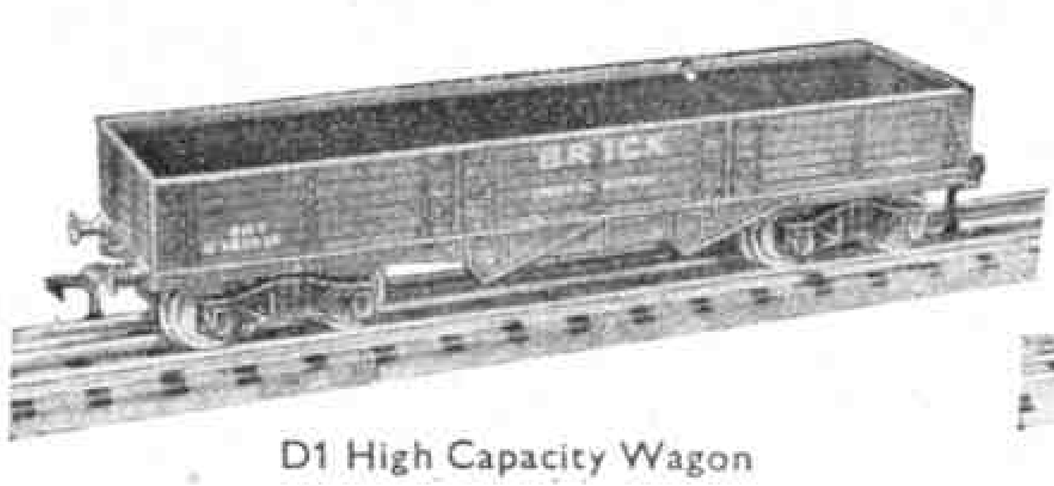
D12 Coach 1st/3rd



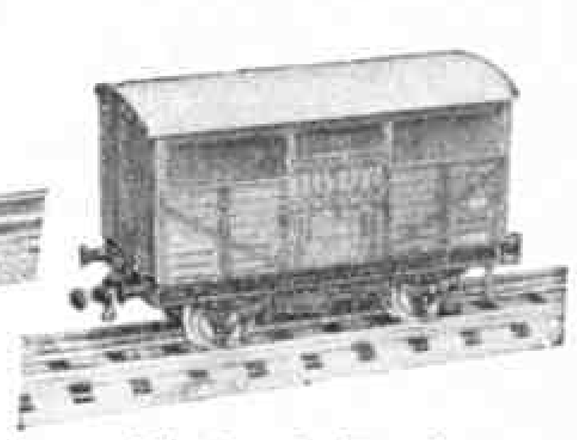
D2 Coal Wagon



D1 Goods Brake Van



D1 High Capacity Wagon



D1 Cattle Truck

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Next Month: "BRITAIN'S MASTER PILOT No. 1." By John W. R. Taylor

MECCANO MAGAZINE

Editorial Office:
Binns Road
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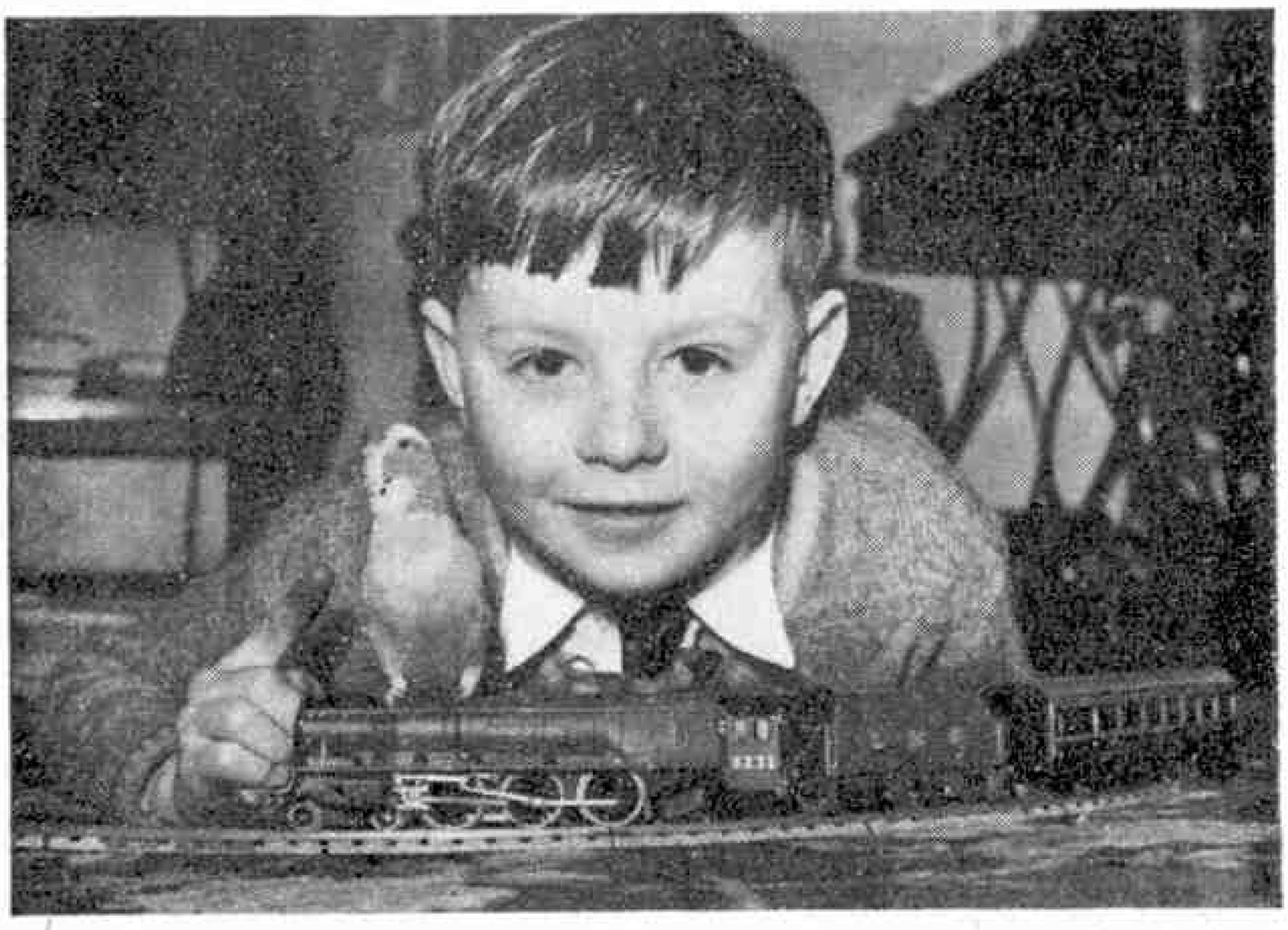
Vol. XXXVIII
No. 5
May 1953

An Unusual Passenger

Jeffrey Lowndes's budgerigar Peter is probably the most remarkable passenger that any Hornby train ever carried. Perhaps I am scarcely right in describing Peter as a passenger, for passengers in trains do not usually ride on top of the boiler of the locomotive, which is Peter's favourite position. The ring of a silver bell is a signal to him to hop on to the engine to begin another run on Jeffrey's Hornby-Dublo railway. He has been doing this for two years, and has proved an ideal traveller.



Peter, the budgerigar shown above, hops on to the Duchess of Atholl for a circuit of the Hornby-Dublo Railway of Jeffrey Lowndes, Ashton-under-Lyne. Photograph by courtesy of Kemsley Newspapers Ltd.

Coronation Approach

This month brings us very near to the date of the Coronation, the event of the year, to which our thoughts will turn more and more as the next few weeks go by. There is a Coronation flavour in the present issue of the Magazine, with one article on preparations for Coronation festivities and another that gives useful hints from an expert on taking photographs of decorations, festivities, and fireworks during the Coronation period. Next month's issue will be more closely associated with this event, as readers will see immediately they receive their copies, for the cover of the June *M.M.* will be a fine coloured reproduction of one of the most delightful photographs of the Queen that has ever been taken. They will also be able to read in the Magazine the story of Westminster Abbey, the scene of the solemn and moving Coronation ceremony, and a special article on Royal Trains, which I am sure will give all railway-minded readers some interesting information on these and on their running in actual service.

Apart from these special contributions there will be the usual feast of good things in the June issue. Just to mark by contrast the entry into the summer period I am including in it an article explaining how R.C.A.F. pilots and others are trained to survive in the depths of an Arctic winter! There will also be a story that will really be topical, on the miracle by which lowly, crawling grubs and caterpillars are transformed into beautiful moths and butterflies.

The Editor

Sixty Years with Sail and Camera

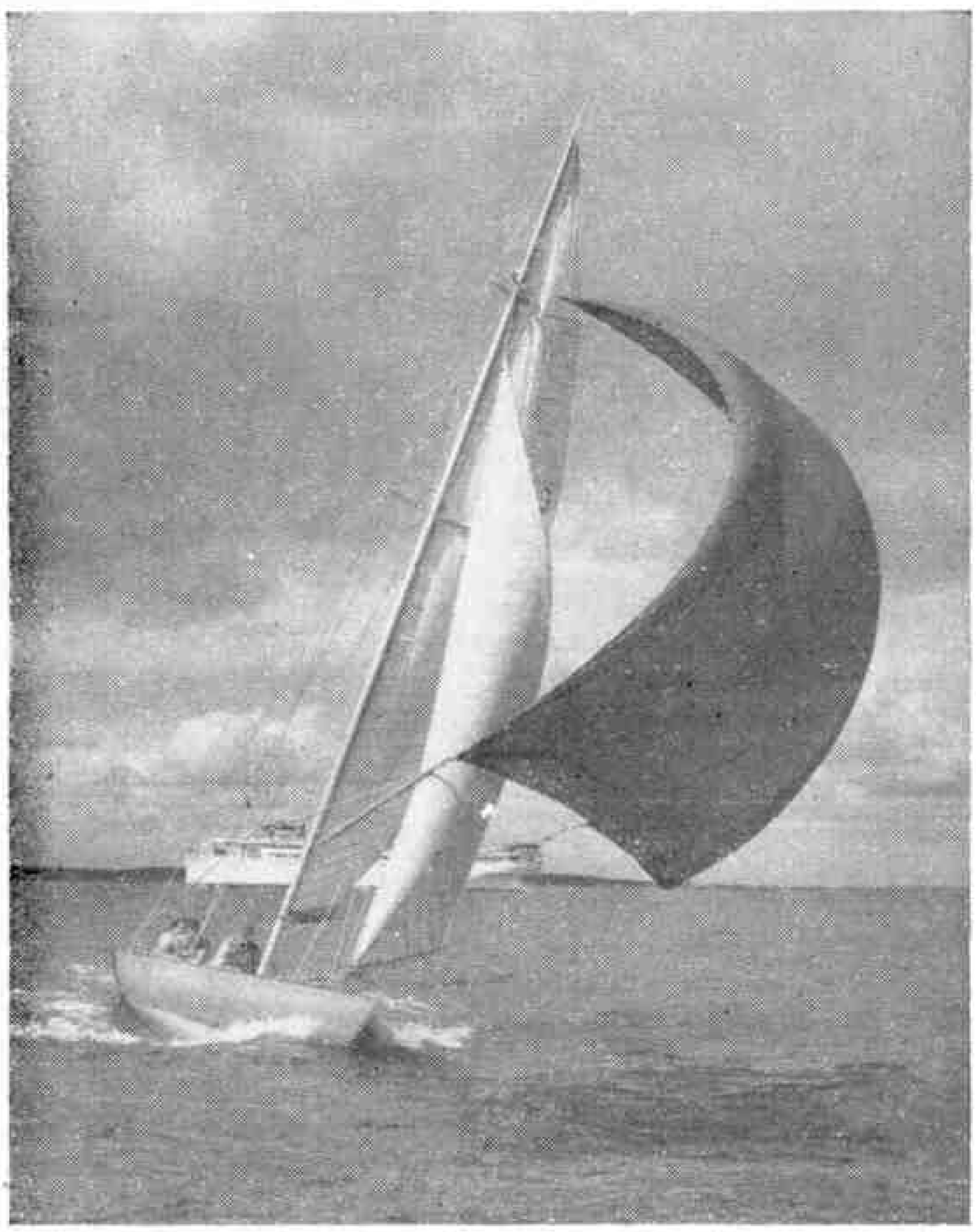
By Frank W. Beken

The author of this article has spent a lifetime in the photography of yachts and vessels of all kinds, and the fine pictures on these pages are excellent examples of his work. Our cover too is based on one of his photographs. It shows the fastest sail boat afloat, being sailed by Uffa Fox, her designer.

IT all happened in the early eighties, when our family was uprooted from mid-Kent and transported to the Garden Isle, to settle in Cowes. To us youngsters who had only seen the sea at very infrequent intervals when taken to Whitstable for shrimp teas, a garden running down to the Solent, with a landing stage and boat, seemed a boy's heaven. My first photograph afloat was taken when a boy of twelve and I must confess that it still thrills me, after sixty years, to photograph these lovely subjects.

It was about this time that photography was becoming popular, although even in the late nineties apparatus was hardly beyond the stand camera era. Marine studies and sail outstandingly have their own beauty and appeal, and at first sight one might consider them fairly easy to photograph. But consider the first and basic difficulty—you are endeavouring to take a moving object from a moving platform and the sea is seldom smooth, particularly round the British Isles!

Again, lighting of the sails requires as much consideration as the lighting of a studio portrait, and at sea one has to move the platform, in this case your launch, to obtain this lighting. Then timing needs much experience and practice; you watch a yacht coming to you, watching till her sails are full, looking for the break of the bow wave, waiting for the break of sun. Success in this comes only with long practice and experience, but when all these details are combined you have caught a scene unsurpassed in beauty of motion.



With spinnaker set.

It may be of assistance to others if I outline briefly "the way I have come," for it is to long experience that I owe my own particular methods, and my knowledge of such crucial matters as the choice of the right kind of camera, lens, shutter and plate, what to avoid and what to select.

As a start consider the limited choice of cameras available in the far off nineties. Then the only shutters were the Thornton Pickards, fitted on the front of the lens, giving a speed perhaps of 1/125th second. Later came the focal plane shutter with slotted aperture, but this was only partially successful and quite useless in rough weather, when speeds of 1/1000th second are required. The standard size of marine photographs among the few professional photographers was then and still is 11 by 9 inches and cameras using 12 by 10 inch plates were used. Indeed in 1880 one firm was using a huge 16 by 13 inch camera. Imagine the difficulty

of working this apparatus by hand, with a large dark cloth flapping madly in the wind. All the same, some of the results were passable; in fact, more than 500 of these huge plates are in my possession and are occasionally used.

Another difficulty was finding the correct focus with these large cameras. The lenses were then all of the old Rapid Rectilinear type with a focal length of probably 14 or 16 inches. Later came the immense boon of the anastigmatic lenses and the projection printer. Not only did these inventions make possible the use of smaller cameras, but they also eased focusing worries, as the lenses covered a much deeper field and the projection printer allowed the best part of any negative to be selected and printed to the standard size. Thus I have found the camera taking 8½ by 6½ plates and using a 12-inch lens was the best instrument for marine work, and it is this size I have used.

Lee rail awash.

As already noted, shutters have to be capable of high speeds, not so much to counteract the speed of the object as to obviate the jarring movements and vibrations of the small craft, boat or launch from which the operator works. For example, in reasonably fine weather, with not too much movement, exposures of 1/200th to 1/500th of a second will be fast enough to give good sharp results; but in rough weather, with your boat pitching and tossing about so that it is difficult to keep one's balance and keep the lens dry, an exposure of 1/1000th of a second is necessary.

In 1950 the Fastnet Race was started from Cowes in a gale of wind and rain. It was vital to get a record for the newspapers, as many foreign yachts competed. I used Ilford H.P.3 plates at a lens aperture of 3.5 and a speed of 1/1000th of a second and obtained good results. Shortly after photographing one American yacht she lost both her masts and had to be rescued by the Yarmouth life-boat, which gives an indication of the weather conditions. The greatest difficulty encountered afloat is in protecting the apparatus from flying spray; salt water will quickly ruin metal fittings.

Now a word about the most important part of the apparatus, which is the View Finder. This must be direct vision, so that you can hold the camera high and watch the approaching subject at the same time. It should cover about half the field of the camera, giving scope when printing to arrange the subject to best advantage and to get the sea line or horizon level. Scarcely less important is the shutter release. This I effect with a rubber ball and tube, using both hands to steady the camera and biting the ball at the instant when exposure is to be made.

The foregoing hints perhaps apply to the more serious or professional photographer, but most of them can be followed by the amateur out for the best results. A smaller camera can be used, but certainly not one smaller than 4¼ by 3¼ inches. This will give enlargements up to 15 by 12 that will be up to professional standard—the professional has to produce enlargements up to 40 by 30, which is not often possible from small negatives.

To revert for a moment to my own outfit, I have evolved (*Continued on page 237*)

Preparing for the Coronation

By Arthur Nettleton

WHEN Coronation Day dawns on 2nd June it will bring the climax to months of preparations by scores of thousands of workers throughout the United Kingdom. Makers of flags and souvenirs, display artists, fireworks manufacturers, and even cleaners of monuments are among the vast army of those who have been feverishly preparing for this great occasion.

Flags and banners of many types and sizes will form the background to the celebrations in cities, towns and villages throughout the land, or will be waved by onlookers along the route of the Queen's processional drive in London. Most of them will come from Lancashire factories, where plans for weaving the cloth and printing the designs upon it were made more than a year ago.

Most of the flags will be Union Jacks, but some will bear additional devices, such as a portrait of the Queen and the Duke of Edinburgh. In other cases the Union Jack will be surrounded by smaller representations of the Commonwealth flags.

In addition, millions of banners and pennants have been produced for street decorations, some incorporating the royal cypher and other traditional devices. The Scottish standard, a lion against a yellow background, and the Welsh one, a dragon against a green background, will also be widely flown in Scotland and Wales.

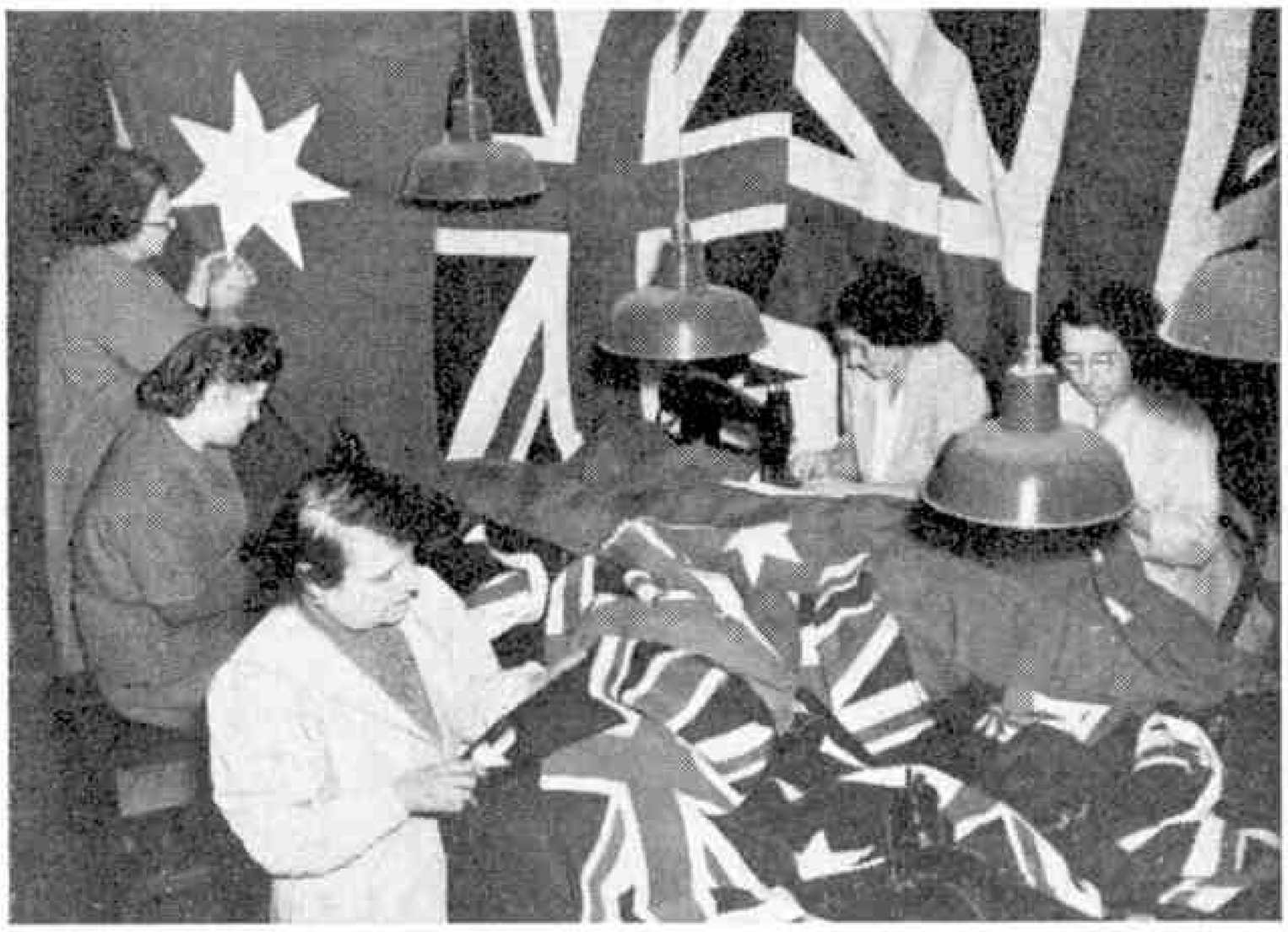
The cheap flags are made of cotton fabric, but the better quality ones are woven from wool. To permit the use of royal emblems the Queen has authorised a temporary relaxation of the regulations governing their inclusion in flags and other decorations, though where a crown is depicted it must not be an exact copy of any of the Royal crowns.

Flag manufacturers themselves give some useful advice about flying ensigns and pennants. The most helpful hint is that they should be hung in such a way that they will not foul nearby objects in a high wind. Failure to observe this requirement will cause them to become ragged in a short time. Hemming is usually executed along the edges of the better type of flag by the makers as a precaution against fraying, but careful hanging also does much to prolong the life of these articles.

Manufacturers of fireworks have been busy devising special effects for the celebrations. Fiery displays indeed have long been a feature of royal pageants, and one of the highlights of the 1937 Coronation was the simultaneous firing of 100,000 rockets from the decks of review ships at Spithead.

This time Londoners and visitors to the Metropolis will see a colossal display on the Festival of Britain site. In addition to huge fire portraits of the Queen, the Duke of Edinburgh and the two royal children, there is to be a waterfall of silver fire 1,000 yards wide. It will stretch right across the Thames, for it is to be erected on the Charing Cross Railway Bridge.

Other items will include three mammoth firewheels, the largest spreading a huge circle of fire 100 ft. in diameter. Flights of hundreds of rockets and salvoes of



Flags will fly not only in the homeland, but also throughout the Commonwealth when Coronation Day comes. Photograph by courtesy of the Calico Printers' Association.

In many places firework displays will provide the climax to our Coronation Day festivities. Here is the scene on the Mersey during the firework displays of the Festival of Britain.

monster bombshells also will be included.

Making fire portraits and other set pieces is a job calling for much planning and skill. The first step is to draw the picture on squared paper. Next, the portrait is built up on wooden frames divided into one-foot squares, each of these squares corresponding with one square on the paper.

At this stage the frames are laid on the floor of a shed, and the design is chalked out on the floorboards as a guide to the men who form the actual firework portrait. This is built up in outline with lengths of cane nailed to the frame. "Quickmatch," which is cottonwool drawn through gunpowder paste, is then attached to the canes.

In the largest displays three miles of quickmatch are sometimes used, and means of improving the spectacle are always being sought. One difficulty is to ensure that all the sections of a big fiery picture will go off together, and that any accompanying effects, such as rockets, will ignite at just the right moment. Walkie-talkie radio equipment is now being used in some instances, so that the men responsible for setting off the fireworks can keep in touch with one another, even though the set piece stretches for hundreds of yards.

London will be going gay not only with flags and fireworks, but also with flowers. In glasshouses tucked away in the middle of Hyde Park, more than 200,000 choice blooms have been carefully tended during the last few months, and just before the great day they will be planted out along the route of the Coronation procession. They include 175,000 tulips and 30,000 pansies, and will make the most attractive show of the kind ever presented.

London's monuments and statues have been smartened up, too, in readiness for the influx of visitors, and no doubt many of these memorials will be noted more closely than they usually are. They have interesting stories.

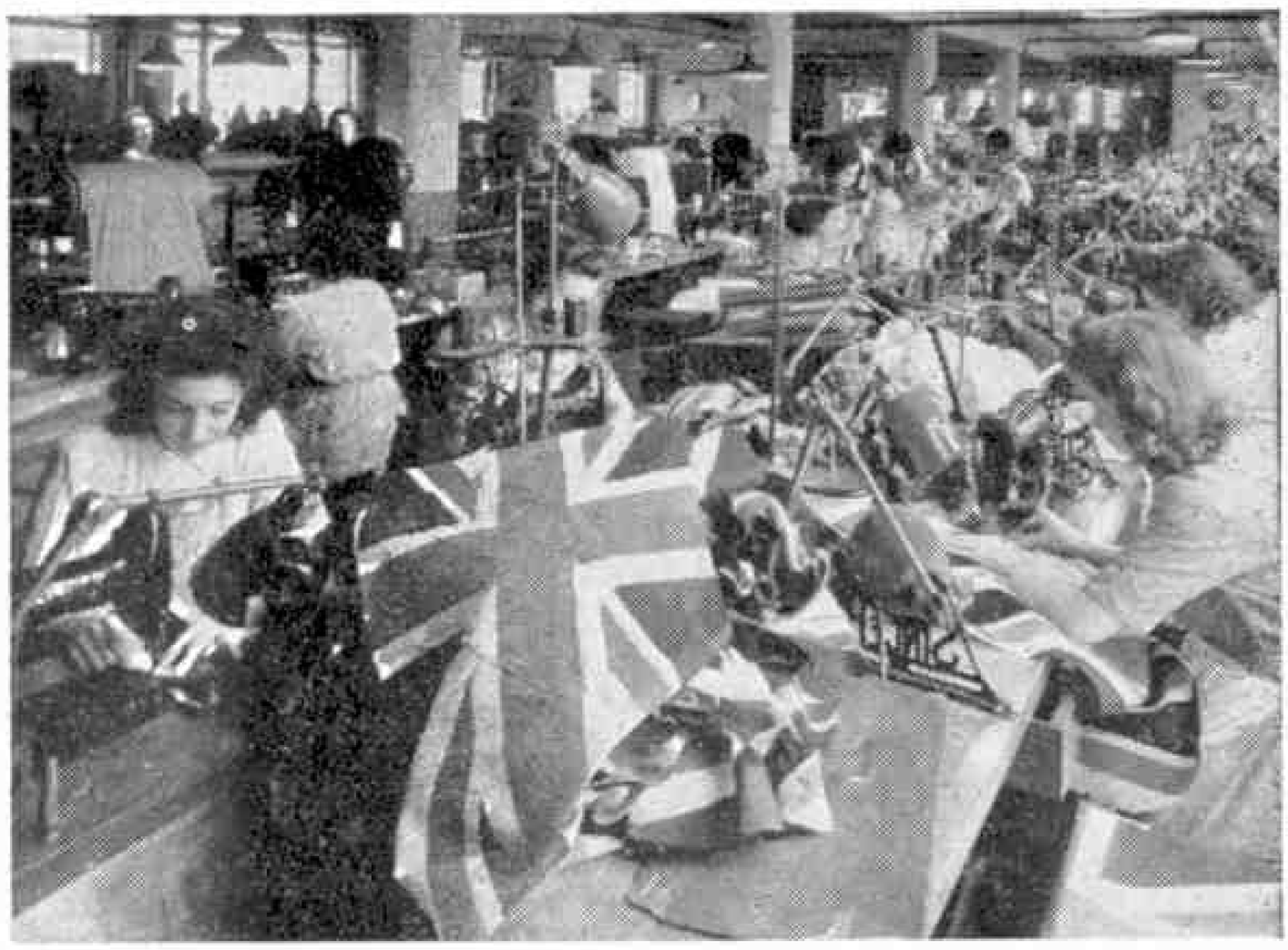
In the forecourt of Charing Cross Railway Station, for instance, stands an ornate pinnacled structure of white stone. It is a replica of the Eleanor Cross set up at this spot by Edward I to mark the place where the coffin of his queen rested during the funeral journey to Westminster Abbey, and from this circumstance Charing Cross gets its name.

Another monument of special interest is the Duke of York's column on Carlton House Terrace. This pillar, 124 ft. high,

There will be torchlight processions too, and here are some of the torches that will be used. Photographs on this page by courtesy of C. T. Brock and Co. Ltd.

is surmounted by a statue of George III's second son, the Duke of York who, according to the song, made a hobby of marching his soldiers up a hill and then marching them down again.

Just how much the Coronation pageantry will cost is uncertain, but it is entertaining to delve into the figures of earlier events in the same class. For example, part of the expense is covered by selling souvenirs, and in 1937 the sale of stools, chairs, cushions, and gold brocade from Westminster Abbey brought in more than £80,000.



Hemming Coronation flags and handkerchiefs. Calico Printers' Association photograph.

A comparison between the prices that will be paid for seats along the route this time and on earlier occasions is also interesting. Spectators at the crowning of Charles II, a highly colourful event to mark the Restoration, paid only 2s. 6d. for a seat. Most sightseers visiting London for the forthcoming event will wish that prices today were no more than this!

The most costly item in the list of Coronation objects, apart from the Crown Jewels themselves, is the splendid coach in which the Queen will ride. It was built 191 years ago for George III, and the bill was £7,597 19s. 9½d., the odd coppers being for some cloth lining.

The vehicle has undergone some reconstruction since that time, however. Queen Victoria had it completely re-upholstered for her Coronation, and King Edward VII had the box seat removed, so that today the horses are ridden by postillions. The King had this alteration made so that he and his Queen would have a better forward view.

The coach weighs four tons, and is 24 ft. long, with a width of 8 ft. 3 in. and a height of 12 ft. Historians tell us that one of the first carriages ever seen in England was the coach used by Queen Elizabeth I. Now another Queen Elizabeth is to ride to her Coronation amid scenes of pageantry unmatched even in the first Elizabethan Age.

Casting 240 Ton Ingots

Keen interest is now being displayed in the United States in giant presses. One of the largest forging presses planned in the States is part of the production programme of the United States Air Force. It is to have a power of 50,000 tons, and will be carried on six press columns, for each of which three giant forgings will be required. These forgings are being made from ingots approximately 18 ft. high and 9 ft. in diameter. When assembled the huge press will rise to a height equal to that of a ten storey building, for each of the three forgings of the six columns concerned will stand 110 ft. in height.

Eighteen ingots were required to make the forgings for the six columns, and in casting each of them metal from two open-hearth furnaces had to be poured in sequence without interruption. Each of the ladles used had a capacity of about 134 tons of steel, and the weight of the ingot was about 550,000 lb. or more than 240 tons. A 7,500 ton press was used in forging the ingots.

The giant press has been planned to produce aeroplane parts at present being made by methods that are less economical and more complicated than those that will become possible when its immense power can be applied.

Stamp Collectors' Corner—

(*Continued from page 269*)

French Expedition."

I hope I have said enough to show how significant are the designs of Irish special stamps, and how well worth study they are. In 1948–9 Ireland issued four air stamps. While these were printed in England, again R. J. King was the designer, and very fine stamps they are too. We do not see many of them used in Great Britain, but no doubt there are plenty overseas. Another very handsome recess printed set appeared in 1950, three stamps in honour of the Holy Year printed by the British firm of Waterlow and Son Ltd., and now we come to the Thos. Moore pair to which I referred at the beginning of these notes. I have already said how well worth detailed examination are the special stamps of our sister country, and these latest are no exception.

There has been a spot of trouble over the Thos. Moore pair, for the accent was missed over the first E in Eire, but collectors like such slips! Finally we get the "An Tostal" or Ireland at Home pair. It is a pity they were typographed, but just as it takes all kinds to make a world, so all kinds of stamps are needed for an interesting collection. These Ireland can provide.

Laxey's Big Wheel

By E. Emrys Jones

ONE of the most amazing sights in the Isle of Man is the Big Wheel at Laxey. Nearly all visitors to the island find their way to this village, just to stare with awe at one of the marvels of Manxland. It is indeed most awe inspiring. My photograph gives you a good idea of this gigantic wheel; the figures give scale to the scene.

Now for some interesting details. The wheel has a circumference of 228 feet, the diameter is 72½ feet and the breadth is 6 feet. The power is 200 h.p., making 2½ revolutions a minute, and the water was hauled from a depth of 1,800 feet. On the wheel are 192 buckets, each of which can hold 20 gallons.

Liverpool comes into the picture, because the axle of malleable or hammered iron was made at the Vulcan Foundry in that city. This huge axle is 17 feet long and 21 inches in diameter, and weighs 10 tons. Incidentally, when it reached Laxey Harbour, by schooner, the miners insisted on drawing it to the building site about a mile away. Two hundred men were needed to cope with the load.

The arms were made at the Vauxhall and Mersey Iron works, Liverpool. These were made of hornbeam and greenheart timber, the rim being of cast-iron.

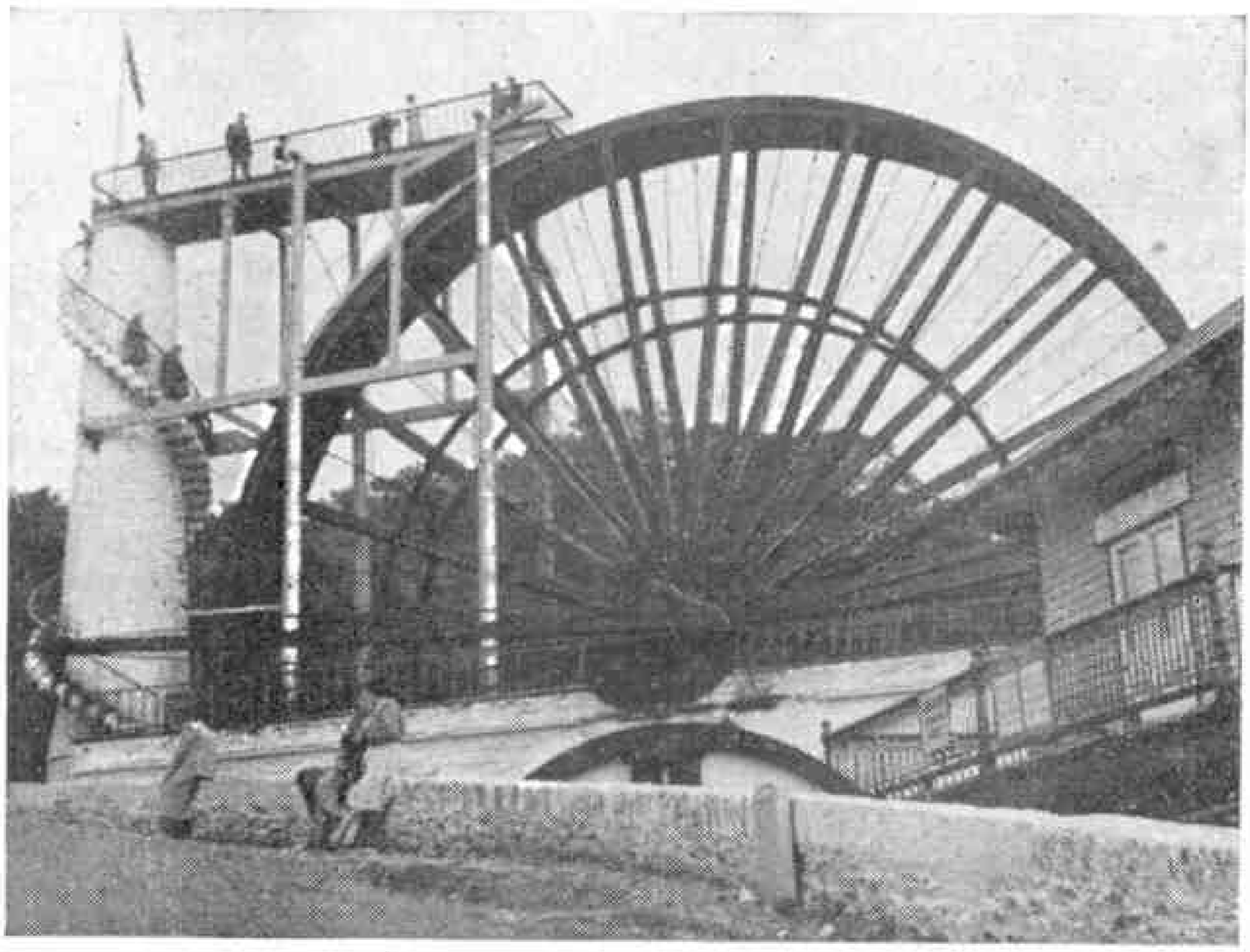
The wheel weighs approximately 100 tons. With a 10 foot stroke at the crank, it has a vertical pump action of 8 feet. The crank, which is attached to the main shaft, weighs 4½ tons. Horizontal rods, supported on wheels running on rails, are carried from the wheel on a long arched viaduct to the main shaft of the mine, which is 200 yards away. The platform, which you can see in the photograph, is 75 feet from the ground, and is reached by a spiral staircase of 95 steps round the white pillar. A small charge is made for permission to ascend to the platform, from which one gets an excellent view of 2,034 ft. high Snaefell, and the surrounding countryside.

You may ask who or what prompted such a project. Well, the answer is simple enough—a risk of flooding in the lead mines of Laxey.

In the year 1854, when Britain had troops fighting in Crimea, and minerals were as important then as they are today, precautions had to be taken. Robert Casement, a 37-year old mining engineer and a native of Laxey, was entrusted the task of freeing the lead mines from water. His answer was the Big Wheel of Laxey. This was set in motion on 27th September 1854, and was christened the *Lady Isabella*, in honour of the Governor's wife. It is recorded that this day was one full of rejoicing for the whole of the Island.

Lead, zinc and copper have been mined here. In 1828 for example, over 500 tons of lead ore was mined. "Black jack" was also extensively mined. This was the miner's name for the ore containing zinc sulphide.

Small wagons running along a special tram track took the ore to the washing floors, which are still to be seen today. Men and boys hammered the lumps of ore; the small pieces were crushed by machinery and then washed. In this way the lead and zinc ores were separated from the matrix; and were then shipped to various ports in England.



The Big Wheel at Laxey, one of the sights of the Isle of Man, which was built almost a hundred years ago.

A. L. Hassett, captain of the visiting Australian team.

The Australian Touring Team 1953

By Cyril Washbrook

THIS season we have with us the Australians, a visit from whom always creates great interest in cricket throughout the world. The fortunes of these Tests will be followed very closely by every cricket lover.

The team is a mixture of experienced players who have toured this country before, and players still to be initiated into this most exacting of all tests of a cricketer's skill and temperament.

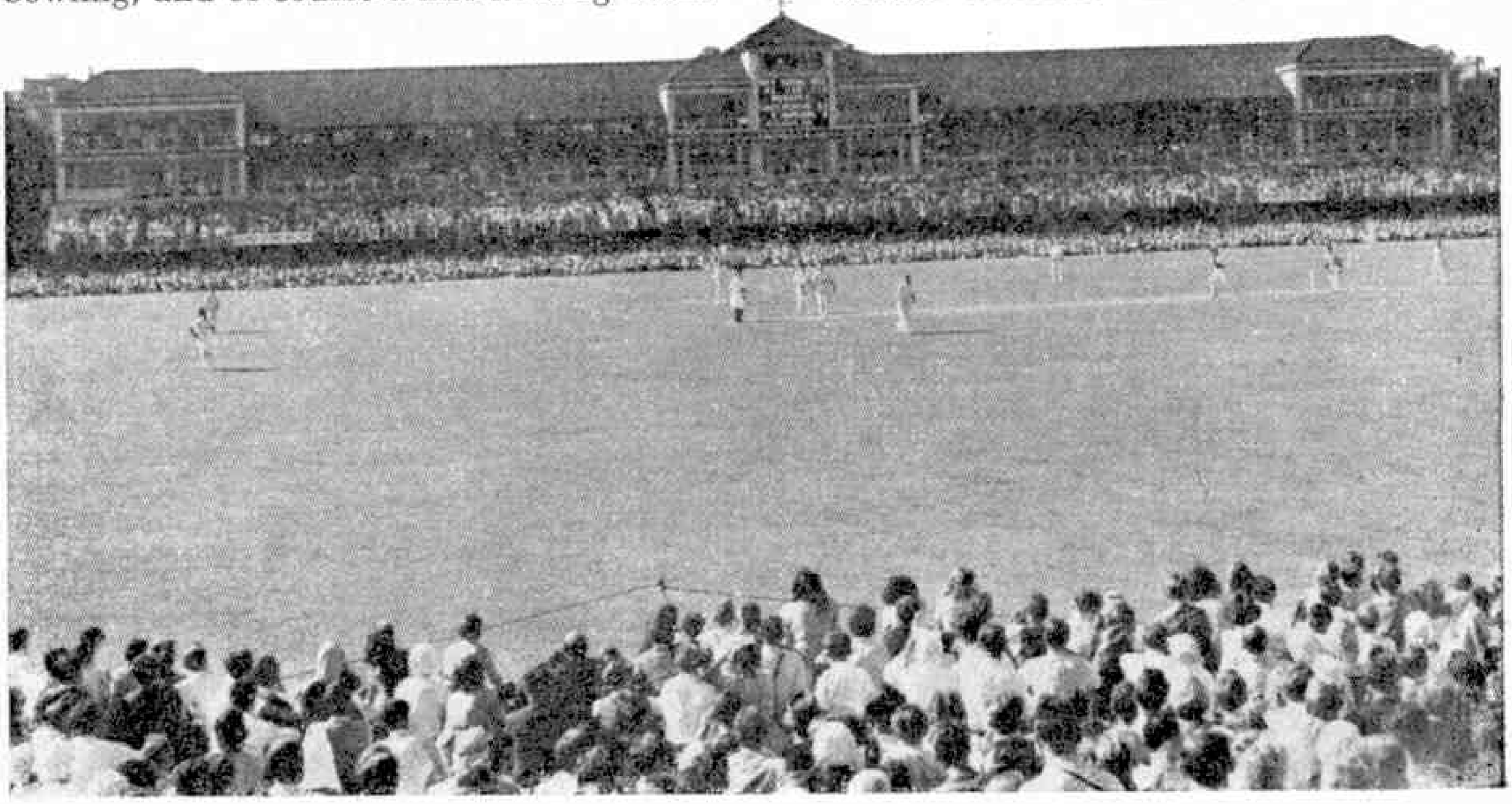
It is natural to try and draw comparisons with the team that toured England under the captaincy of Sir Don Bradman. Although it is early to tell how the players will perform, I sum up the present side as follows. It will be slightly weaker in batting strength, almost equally good in bowling, and of course a fine fielding team. Sir Don Bradman will be greatly missed, not only as a great batsman, but also as a fine captain.

We must always remember in trying to assess a team's strength that bowling and fielding win more games than great batting performances.

Whilst I always have the greatest possible respect for the cricket of the Australians, I certainly feel sure that the England XI have a greater chance of winning back the Ashes this year than we have had since the end of the last war. England have been very wisely building a fine young team since the return of the 1950–51 M.C.C. Touring Team to Australia, and South Africa and India have been beaten in the process during our last two cricket seasons. A successful team is

Len Hutton. England's captain against India in last year's Test series.

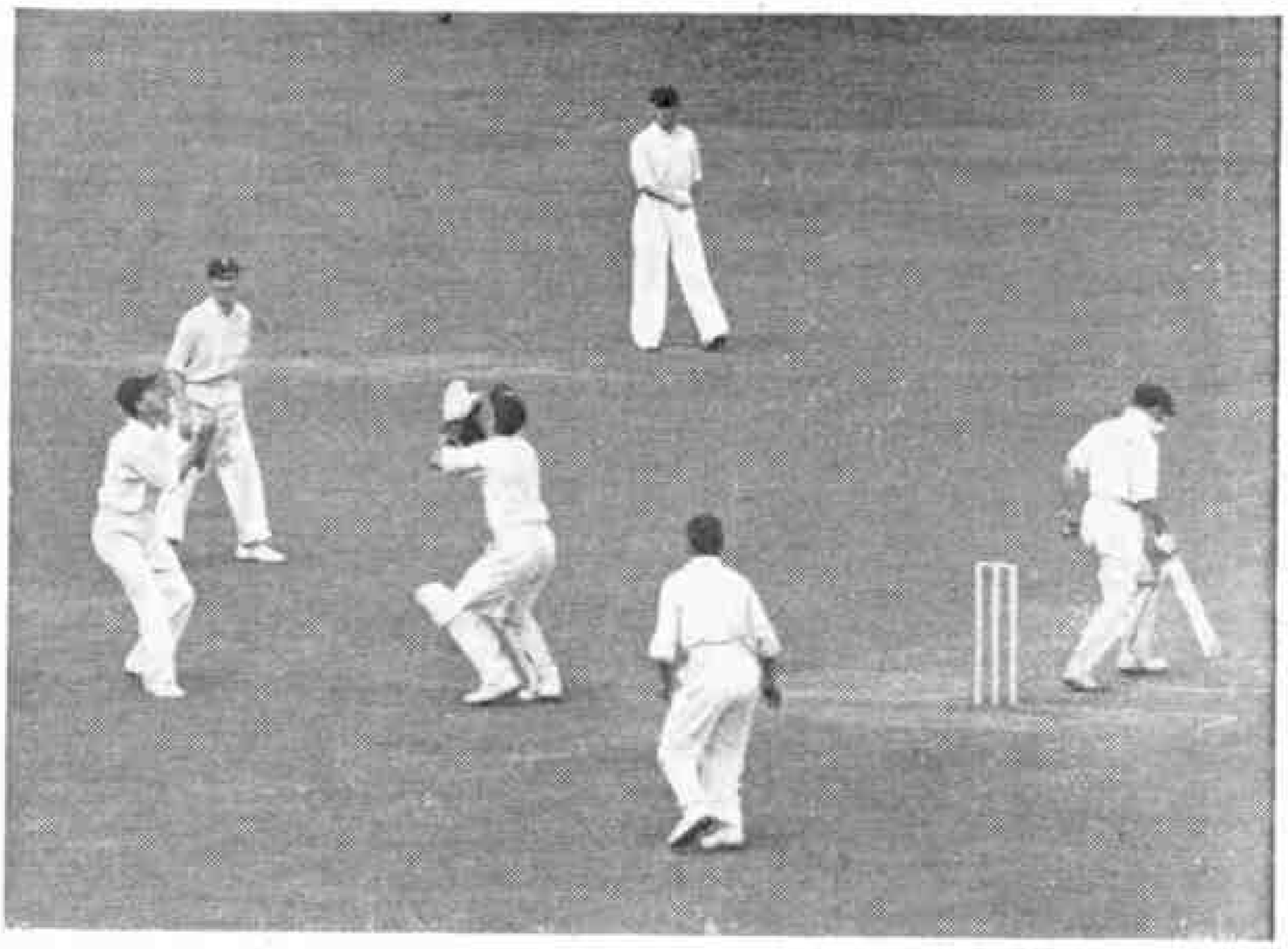
In this article Cyril Washbrook, the famous England and Lancashire batsman, tells his readers something about the members, old friends and new, of the Australian Cricket Team now at the beginning of their tour of Great Britain. The tour includes five Test Matches, and once again our famous grounds, such as Lord's, seen in the illustration at the foot of the page, will be the scenes of struggles that will be followed with tense interest in all cricket-loving countries.



a confident one, and confidence is a great thing in cricket.

Much depends on the type of wicket on which the Tests will be played. On soft and rain-damaged wickets, England must surely be favourites to win. Australia are not well equipped with batsmen or bowlers for this type of wicket.

On hard and fast wickets there will be little to choose between the teams. In Keith Miller and Ray Lindwall Australia have two of the greatest fast bowlers of all times, and they can be a great menace on hard wickets. In this department of the game the Australians are much better off than England. These two bowlers will be the spearhead of the attack for Australia, and England's task is to prevent them from causing early reverses to our batting strength. If this can be done, then England should put up good scores.



An incident in the 2nd Test Match of 1948, at Lord's. T. G. Evans, England's wicket-keeper, catches a ball from D. G. Bradman, off J. Laker, only to find that it was judged a bump ball, and therefore no wicket!

R. Banaud, one of the newcomers in the Australian team. He is a leg break bowler who can also score runs.

The main strength in Australia's batting rests with Hassett, Morris, Miller and Harvey. Lindsay Hassett, the captain, has had a great amount of experience of English conditions, and so very often has he proved a stumbling block to England's bowlers. He is a fine stroke player when the occasion demands, and also a great fighter when things are going against his team.

Arthur Morris must rank as one of the greatest left-hand batsmen. He had a very successful tour of England in 1948, but during our 1950–51 tour of Australia he very often fell a victim to Alec Bedser, and it will be very interesting to see this great duel again. Much will depend on the success or failure of Morris. His opening partner, McDonald, has not had the same experience, and so the main burden must fall on Morris for a good start to Australia's batting.

Harvey, another left hander, is making

K. R. Miller, described by Cyril Washbrook as perhaps the finest all-round cricketer in the world. One of the greatest fast bowlers of all times, and a fine batsman, he is already well known to enthusiasts here.

his second tour of England. He made a century in his first Test against England at Leeds in 1948. This player attacks the bowling from the very first ball he receives. I don't know any player in the world who hits the ball so hard so early in his innings. He can be devastating to any bowler. During the recent tour of South Africa to Australia he had a most remarkable season. Runs flowed from his bat, and he must be rated perhaps the most dangerous of all Australian batsmen of this particular tour. His fielding is a joy to watch.

Ian Craig a newcomer who has been hailed as another Bradman. Craig is only 18 years old, but already he has many big scores to his credit.

Keith Miller is a most versatile cricketer, perhaps the finest all-round player in the world today. He is a great fast bowler, and a fine batsman and fielder. Miller's batting is much more solid than it was in 1948, and I am sure we will find him so much more consistent with his scores in Tests. Here is a great cricketer; around him you can build your team.

We shall all watch very closely the young batsman Ian Craig. He has a great reputation to live up to. Many good judges of the game say he is another Bradman. If this is true, he will cause a lot of trouble for our bowlers and fieldsmen. He may take a little time to settle down to English conditions, so before we pass judgment on him, give him a fair trial. De Courcy is another young batsman who may or may not be a success. I am not at all sure he will like English wickets as much as those of Australia.

Hole from South Australia played against us in the 1950–51 series. Here is a fine young attacking player, who may well be a great success. He also bowls spinners, but it is as a batsman that we shall mostly see him.

Now for a further word on the bowlers. The fast bowlers I have already mentioned in Miller and Lindwall. They will receive great support from Johnston, a fast left hand bowler or, as the conditions determine, a slow spinner. Here is a dual purpose bowler, and perhaps from the Tours point of view, the best of the Australian attack.

Davidson is another fast bowler who plays for New South Wales. He certainly bowled well against us in Sydney, and he should be a fine bowler in England. In Ring and Banaud the Australians have two leg break bowlers. Both are capable of getting runs, and Doug. Ring is a very hard hitter. Perhaps it will be Ring who will play in the Tests.

The wicket keepers are Tallon and Langley. Both are very good indeed. Tallon was perhaps the greatest wicket keeper in the world in 1946, but his form was not quite so good when I saw him during 1950. He may however be the first choice because of his experience, which means so much in Test cricket. The team is completed by Ron. Archer, another all-round player who bowls fast medium, and J. Hill, another bowler who specialises in top spinners and leg breaks. Of the full number of 17 players all but three, Davidson, Hill and de Courcy, had already taken part in Test matches when the team was selected

So we see them as a fine team in all departments. We shall have interesting cricket to watch and read about.

May England win the Ashes and bring glory to English cricket once again.

Is this a foretaste of things to come? Here Neil Harvey is seen being congratulated on achieving a century. This one was made in his first Test Match, at Leeds, during the last Australian tour, in 1948.

Engineering News

Leyland Vehicles for Rescue Work

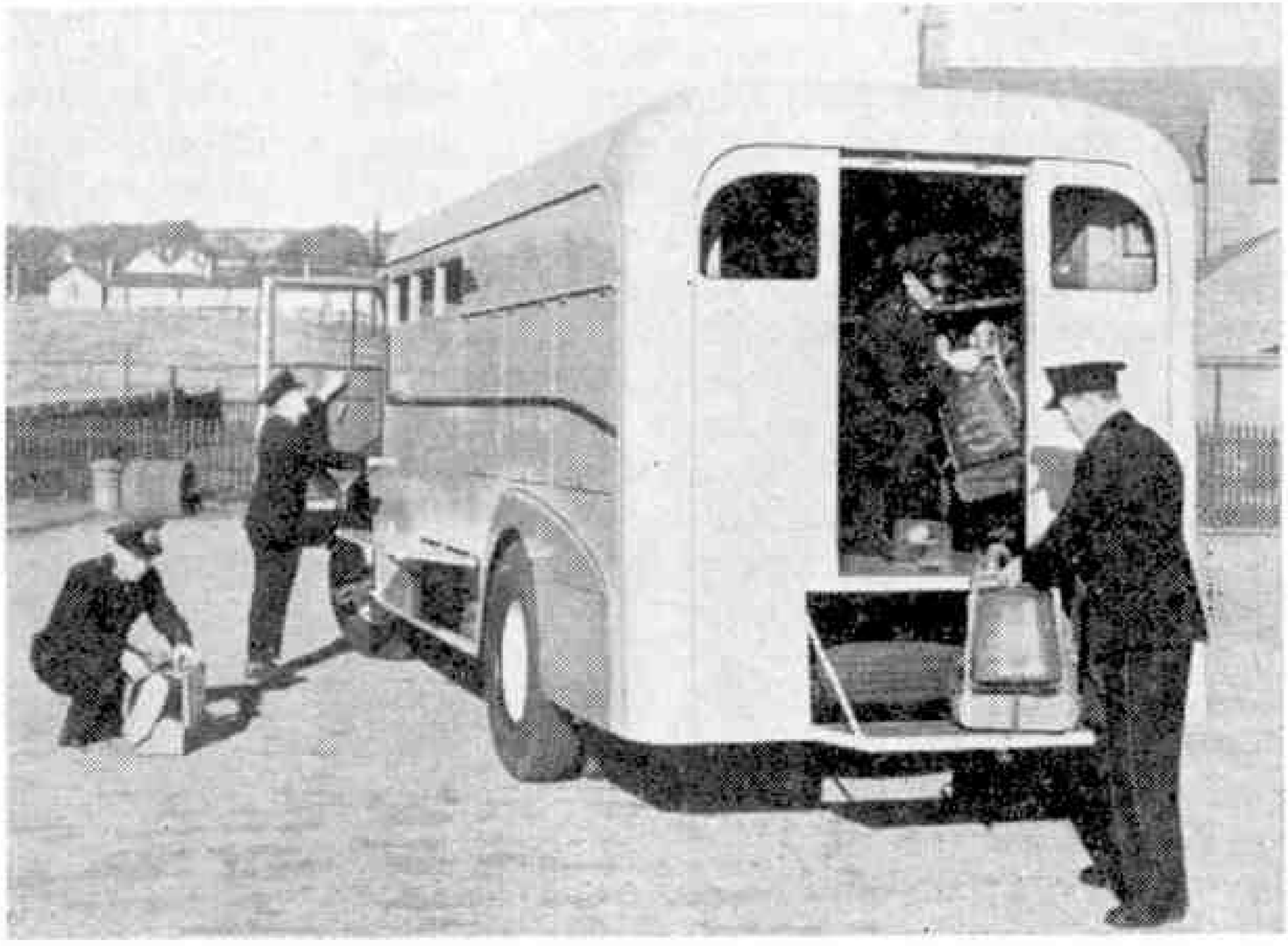
Every type of scientific rescue apparatus, even canaries in cages, are carried by a new mine rescue vehicle that has been delivered by Leyland Motors Ltd. to the National Coal Board. It is for the use of the Durham and Northern (N. & C.) Divisions Fire and Rescue Brigade, and is shown in the upper illustration on this page. Despite all advances in modern science, canaries are still the traditional and, so far, unsurpassed means of testing for the presence of noxious gases.

The machine is based on a Leyland diesel-engined Comet chassis, and is the first of four that have been ordered for this Rescue Brigade. When they are all delivered they will provide service over the area of Durham and Northumberland.

The body for the new machine was constructed by Wilson and Stockall Ltd., Bury, and has a framework consisting of hardwood with exterior panelling of aluminium. Seating accommodation is provided for eight rescue workers, and adequate storage space is available for all types of rescue equipment. Lockers containing breathing apparatus are accessible both from the inside and the outside of the van body, so that no time need be lost in unloading operations.

A great variety of first aid and other appliances, including self-contained breathing apparatus of the liquid air type, pumping equipment, telephone and telephone cable, special clothing and tools are carried.

The van will be kept in a state of constant preparedness at one of the permanent stations, ready to answer a call for help at any time of the day or night.



The Leyland Mine Rescue Van described on this page. Photograph by courtesy of Leyland Motors Ltd.

Ancient Bridge Carries Great Load

The 14th century bridge at Stopham, Sussex, recently carried the greatest load it had been called upon to support in all its long history. The load consisted of a huge G.E.C. Transformer, weighing 95 tons, which was on its way from Birmingham to a site near Fontwell. It was carried on a 52-ton trailer with tractor and lorries fore and aft each weighing 25 tons. There were many anxious moments during the passage of this convoy over the ancient structure, as the width of the load was 10½ ft., which gave a clearance of only about 6 inches on either side.

The load is seen on the Bridge in the lower illustration on this page.

Anxious moments at Stopham's 14th century bridge as a heavy tractor and trailer carrying a giant 95-ton Transformer passes over it on its way to Fontwell, Sussex. Photograph by G. G. Garland.

A New Flash Lamp for Use in Eye Treatment

A high-intensity flash lamp, which enables colour photographs to be taken of the retina of the eye, has been developed by the British Thomson-Houston Company Ltd., with the co-operation of the medical illustration department of the Institute of Ophthalmology. The new lamp is designed to give a very short exposure so as to eliminate the effect of uncontrollable eye movements, and to provide the intense illumination required for colour photography. Lamps of this design are being used for establishing colour photography in dealing with eye complaints.

The lamp has a flash tube in the form of a hard glass cylinder 110 mm. long, into each end of which an electrode is sealed to form an arc gap of only a few millimetres. The tube contains xenon at about atmospheric pressure.

More Power from Niagara

Tunnelling Under a City

By James Montagnes

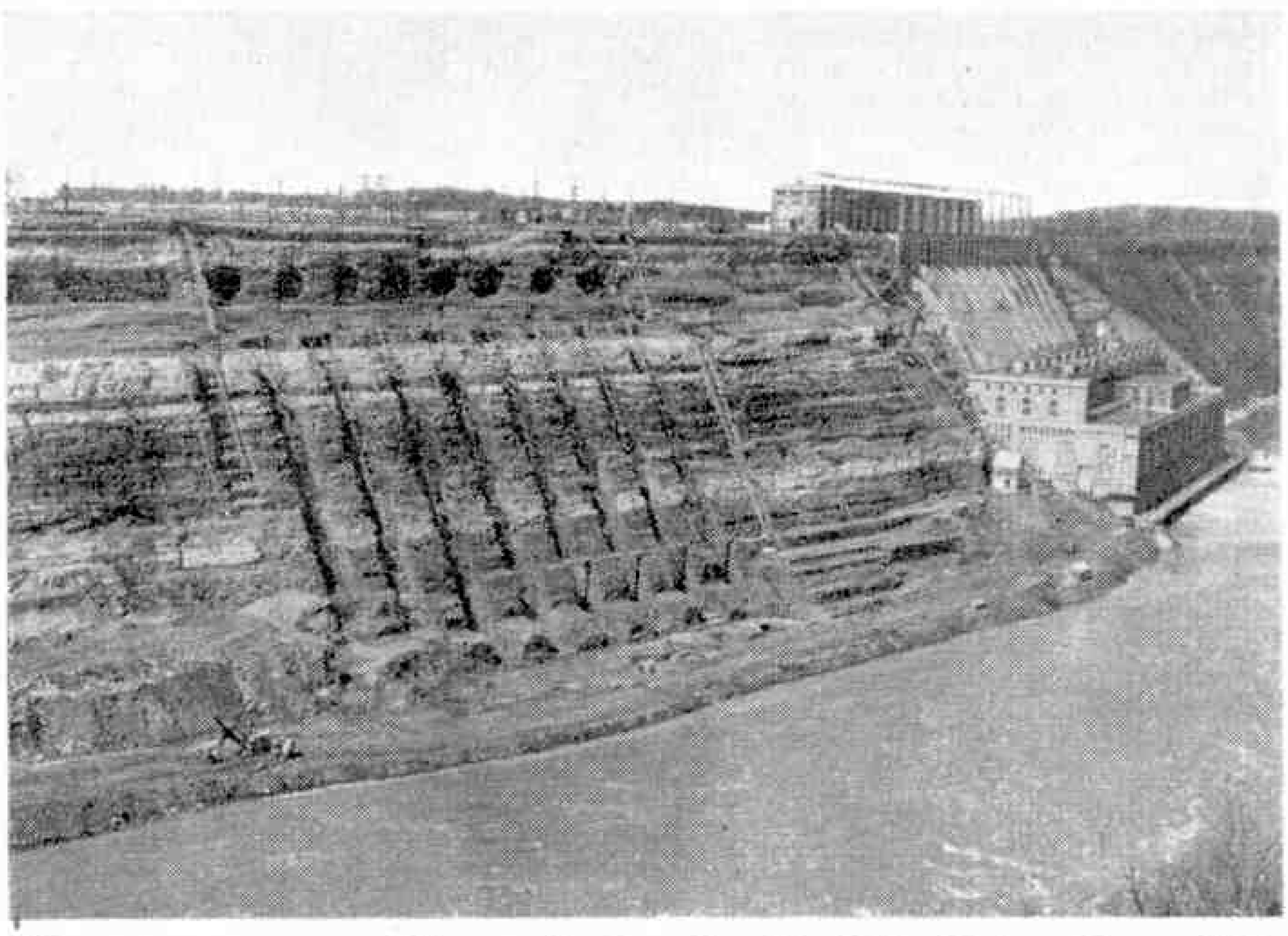
TUNNELS are being dug under the city of Niagara Falls, Ontario, as part of a scheme for increasing the power developed by the famous falls. For a length of 5½ miles workmen are now busy digging through rock and sand to build a tunnel, the largest of its kind in the world, that will have the height of a two-storey building. This will carry water from above the Niagara Falls to a point on the Niagara River far below them, where a new power station is being built to more than double the power Ontario will obtain from the waterfall. The programme will cost £65,000,000 and the first power from the new generating station is to be ready in 1954.

With a rapidly expanding industrial development in southern Ontario calling for ever more power, the provincial government's Ontario Hydro-Electric Power Commission went into action immediately after Canada obtained agreement with the United States, a little more than a year ago, on expanding the power resources at Niagara Falls. Both countries are to take more power from the drop in level from Lake Erie to Lake Ontario, and both have agreed to do so without changing the scenic attraction of Niagara Falls.

The Ontario development will take water as it rushes towards the brink of the falls and drop it through a 45 foot wide tunnel to a depth of 250 feet below the river surface. Then for 5½ miles the tunnel will gradually carry the water uphill again to an open canal, in which it will flow two miles to the seven penstocks of the new generating station. There the water will be almost on the level from which it started, and it will drop down the concrete penstock tubes to the electric power generating turbines, where the rushing water will add 700,000 h.p. to the 525,000 h.p. already generated at the old plant of the Ontario Hydro-Electric Power Commission. Then the water will drop a little more into the roaring Niagara River and so pass on its way to Lake Ontario.

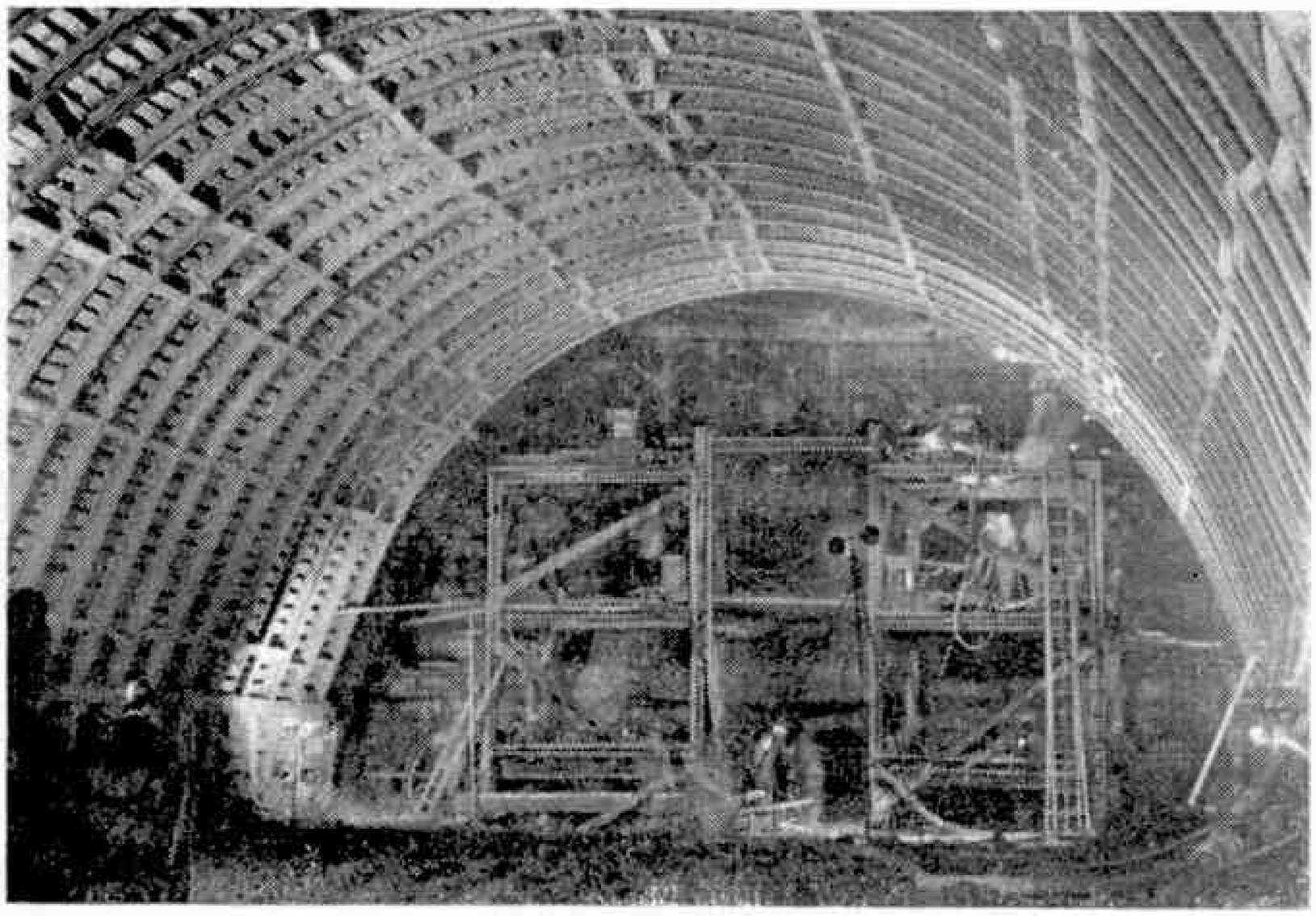
The tunnelling job is being done from five shafts sunk off-centre from the actual course of the tunnel. This is to allow for building a second tunnel parallel to the first at some future date. As the shafts are sunk, concrete shells will be built to form their linings, and this will be continued throughout the tunnel construction. The tunnel will be about 51 feet in diameter when it is cut out of the rock and earth, and when the concrete shell is built it will have a finished inside diameter of 45 feet, almost twice the height of an ordinary two-storey home.

From the rock walls of the Niagara River shore below the falls, a site is being



Where the new power station on the Canadian side of the Niagara River will be built. In this picture the excavation work is seen in progress, and the existing power station also is visible.

excavated and dynamited by northern Ontario hard-rock miners. There the generating station will be built. The canal that will carry the water from the end of the tunnel to the generating station will be 200 feet wide and 60 feet deep. It is being cut out of solid rock.



Boring one of the 45 ft. tunnels, hewn out of solid rock, that will carry water from above the Niagara Falls to the new power station.

The vast construction job has required the building of an entire town site, complete with hospital, for the 5,000 men who are employed on the project. Access roads to take the rock and earth from tunnels have had to be built, and wartime-invented Bailey bridges were erected over the river outlets of the first generating station to allow workmen to begin making a dent into the rock face of the generating station site. Blasting of roads and levels for the generating station and openings for the seven penstock tube entrances, each about 50 feet in diameter, has required the special skill of miners who usually work in the northern Ontario gold mines.

Unlike the present power developed at the Ontario Niagara power station, the new electric power will be standard 60-cycle current. At present 25-cycle current is generated at the Niagara development. All of southern Ontario deriving its power from this 25-cycle current is being changed over to the 60-cycle current which is common to the rest of Canada and most of North America. It will supply a population in southern Ontario that has grown by almost 500,000 since 1945, while industrial development has doubled since 1939.

TITANIUM PROGRESS

Remarkable advances have been made in the production and application of titanium, the wonderful metal dealt with in the article on page 124 of the March issue of the *M.M.* Up to five tons a day of the metal are now being produced in the United States, and facilities for increasing this output to 20 tons a day are under construction. In addition, ingots of sizes that can be measured in tons rather than pounds can now be produced, for ingots weighing two ton are being made.

In addition, reliable alloys are now available, and more control can be exercised over the quality of the metal produced. Applications of the metal and its alloys in various industries are now well established.

The dioxide of this metal is already well known as the pigment of white paints that are remarkable for their high covering power.

Sixty Years with Sail and Camera—

(*Continued from page 227*)

a mahogany camera using plates of 8½ by 6½ inches, with the front extending about four inches, giving sufficient extension to focus from say a 12 foot dinghy at 25 feet distance to infinity. An anastigmatic lens of 12 inch focal length working at F.3.5 for poor weather allows F.16 or F.22 to be used in fine weather. I use glass plates in preference to films, finding that they last longer, show no signs of abrasion and are very little trouble to handle in developing and retouching.

With the many grades of paper available of all contrasts no trouble should be found in producing perfect prints.

Panchromatic plates should of course be used, with antihalation backing and frequently with medium yellow filter. But in all this leave nothing to chance and have all your gear of the best; you cannot afford a failure, for a picture lost at sea can never be regained. You need to develop an eye quick to anticipate, for the pattern changes second by second. Still by careful judgment, following up your subject as the speed of your own boat or launch permits, you will not lack for opportunities. The speed of sailing ships is slow; the fastest recorded is not much over 14 knots, but remember that in making an exposure the speed and gyrations of *your* vessel must be allowed for, as this is the governing factor.

As I look back on my long experience of photography at sea I am reminded of the words of a leading British yachting correspondent who said that photographing sailing ships had much in common with big game shooting; it was always as exciting and could be just as dangerous. Unfortunately the day of the great yachts is almost over because of heavy costs and high taxes. But there are many small sailing yachts all round our coasts, many more indeed than ever before. Thus the opportunities for marine photography are multiplied and although the character of the boats is altered the beauty and the excitement are still there.

Railway Notes

By R. A. H. Weight

Big Speed-up for Coronation Summer

Quicker long distance passenger expresses on many routes have been announced. These will benefit regular travellers as well as those on holiday bent. The summer time-tables will operate longer this year, from 8th June, to 19th September. The full service, applying from about the beginning of July, will include *The Elizabethan* non-stop express between Edinburgh (Waverley) and London (King's Cross) providing a 6¾-hr. timing in each direction over the 393 miles at an overall average of over 58 m.p.h. This will be the fastest over, apart from the limited load, streamlined *Coronation* flyer of 1937–9, and it will be 22 min. quicker than last year's *Capitals Limited*, which it replaces. The *Royal Scot* will be 30 min. faster than last year, with a 7½-hr. Euston-Glasgow schedule both ways, calling at or near Carlisle.

Other Anglo-Scottish services will be accelerated like many others. A group of two-hour expresses on the L.M.R. Euston-Birmingham route will provide a notably improved service, of benefit also to Coventry, Wolverhampton and other Midlands centres. Over the former Cheshire Lines joint system, though in Lancashire, the hourly-interval fast service between the Central stations in Liverpool and Manchester will be run on a 45-min. timing, retaining existing stops.

The introduction of more Britannia class 4–6–2s will enable much improved services to be provided on the Liverpool Street-Cambridge-Ely-Norwich route of the Eastern region. The fast timings on the Liverpool Street - Norwich route via Ipswich will be continued, in some cases with increased loads.

On the Western Region, mile-a-minute start to stop runs will reappear, as the *Merchant Venturer*, 11.15 a.m. from Paddington, and the noon Bristol-London express will be booked respectively from Paddington to Bath in 106 min. for 107 miles, and over the 77¼ miles to Paddington from Swindon in 77 min. Several others will be quickened, while new weekday expresses will include *The Pembroke Coast Express* from Paddington to South Wales at 10.55 a.m., a through morning train between London, Falmouth and Newquay, and additional Paddington-Bristol services.

The fast and frequent services, both steam and electric, which have become a recognised feature of the Southern will again apply. The up mid-morning Kent coast express, via Dover, will be accelerated to an 80-min. timing between Folkestone and Charing Cross, calling at Waterloo (Eastern) as in pre-war years, as will the down 4.15 p.m. return train. This service is being named *The Man of Kent*.

Seats can be reserved on more than 5,000 trains per week. The number of restaurant or buffet car services will be increased to nearly 4,000 per week. The completion of a number of track repair or renewal undertakings allows for the removal of certain speed restrictions, with an increase in maximum authorised speeds up to 90 m.p.h. over certain stretches of main line.

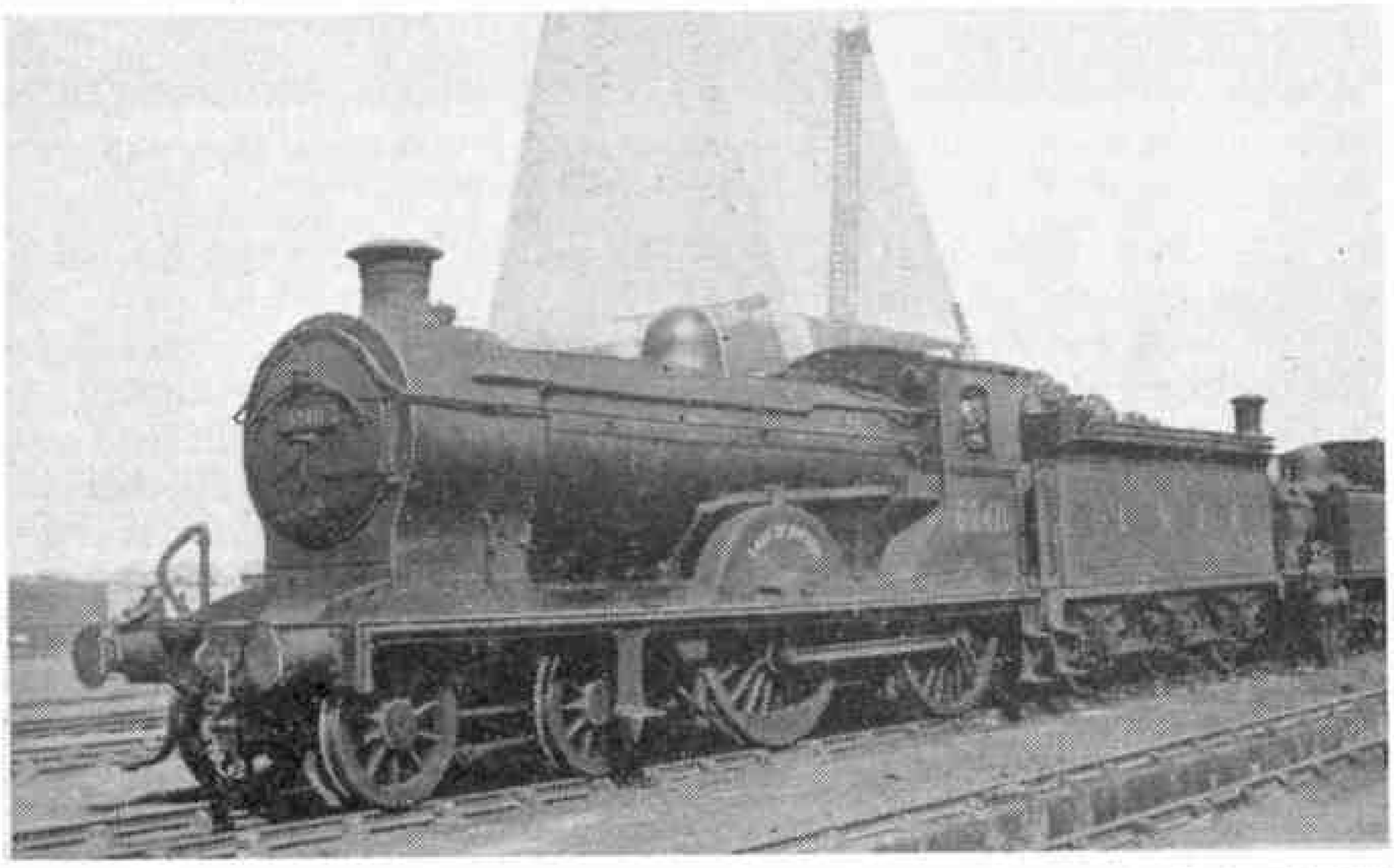
During the first week in June there will be a large number of special trains to and from London for Service and ordinary passengers in connection with the Coronation.

The London Midland Region News

The construction of B.R. class 4 2–6–0s continues at Horwich in a series numbered 76005–19 for the Southern Region, where the first 10 are allocated to Eastleigh. Class 4 2–6–4Ts built at Brighton and numbered 80050–3 were recently announced as stationed at 26A, Newton Heath. To 1A shed, Willesden, have gone new diesel-electric shunting engines from Derby Works, numbered 13015–6, following a batch of five for the Southern Region.

Locomotives condemned and withdrawn include the last of the 4–4–0 compounds built by the tormer Midland Railway; this was No. 41025, lately working in the Birmingham-Gloucester areas. Another is the last L.N.W.R. 0–8–2T, class 6F No. 47877, of the powerful Bowen Cooke type, similar in many respects to the well-known G 0–8–0 tender class, with Joy valve gear and dating back to 1911. The large Crewe 8–coupled tank designs, including the 0–8–4, thus become extinct.

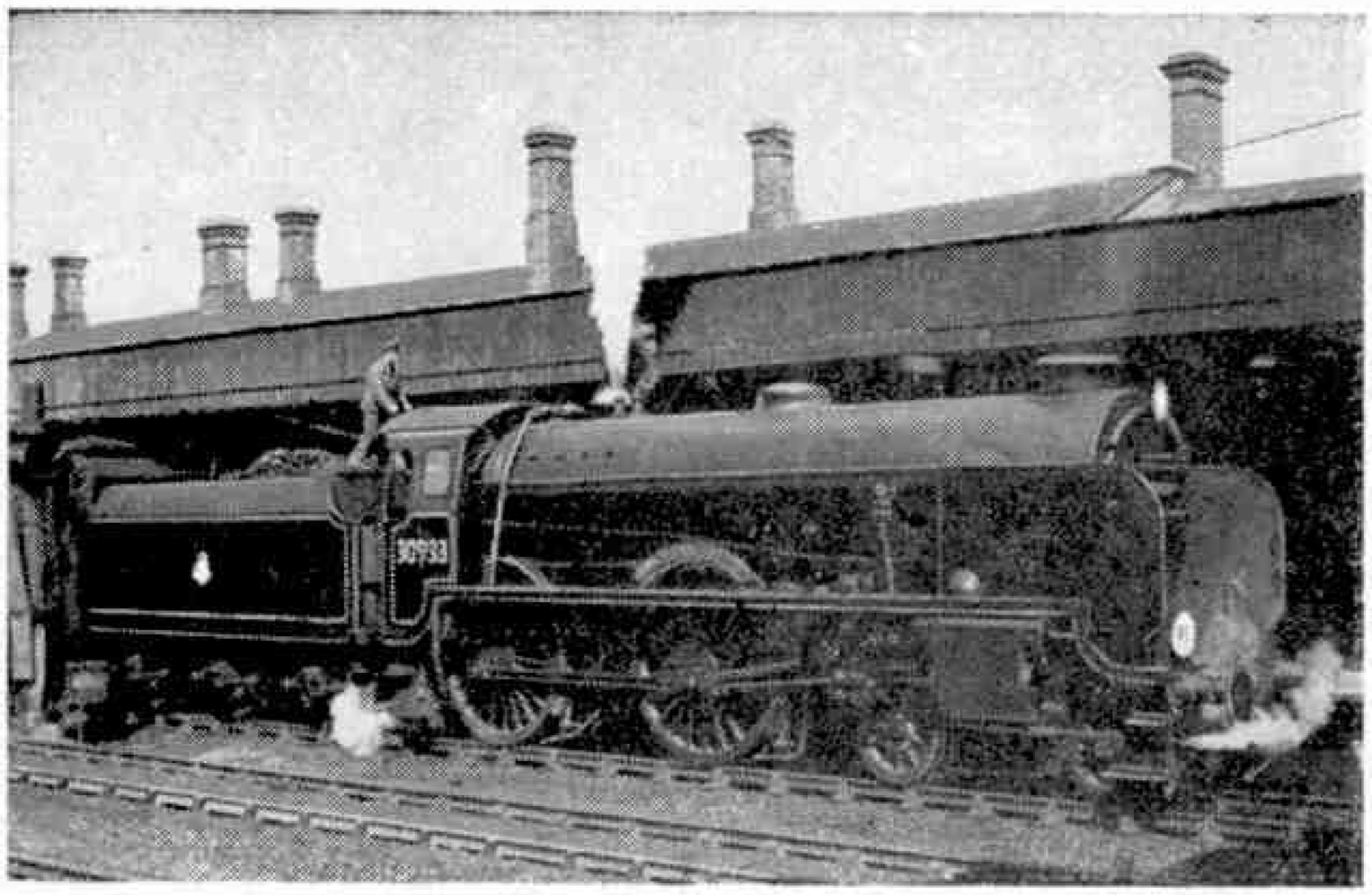
One of the Webb veteran 2–4–2Ts, No. 46601, headed the final passenger trains on the Cheddington-Aylesbury branch at the end of January last. Britannia Pacifics Nos. 70031–4 working from Longsight Shed have been noted, among other duties, on Manchester-Euston expresses via Stoke-on-Trent.



Lady of Avenel, now withdrawn, the last of the original North British "Scott" class to remain in service. It was the only N.B. 4-4-0 to assume L.N.E.R. post-war green livery, which it retained to the end although renumbered B.R. No. 62411, as shown in this photograph by C. Lawson Kerr.

The express engine allocation to Camden, 1B London Shed, lately consisted of 15 Duchess 4–6–2s, plus *Princess Anne*; 14 modified Scots; the two "Jubilees" rebuilt to 7P numbered 45735–6; four ordinary 6P "Jubilees"; and five rebuilt Patriots, together with No. 45502, still retaining parallel boiler and named *Royal Naval Division*. Some Pacifics, though fairly recently painted, retain the black finish with straw lining.

Roof reconstruction at Skipton Motive Power Depot last year was carried out at the same time as other rebuilding by using old bullhead rails, which have been satisfactorily employed on account of sufficient supplies of new steel not being available. Notable modernisation has been carried out in the way of passenger accommodation, refreshment rooms



B.R. No. 30933 King's Canterbury, one of the massive 4-4-0s of the Southern "Schools" class, pauses at Tonbridge with a Dover express. The photograph is the work of R. Russell.

and office facilities at the important main line junction station Bletchley (Bucks.), which had recently presented a somewhat antiquated aspect, but is now much more effectively lighted and equipped.

Western Tidings

When I was at Paddington on a rather dull and foggy day in March I was glad to look round the brightened, well-lighted booking and enquiry offices adjacent to the main departure platform, which now have more room and plenty of clear indications. Over 2¾ million passengers take tickets at Paddington annually; they are now provided with booking windows of the latest and most convenient type.

Quite a number of new class 2 2-6-0s have recently appeared on the Cambrian Section, including Nos. 46503-17, stationed at 89A, Oswestry. Others among the latest completed at the time of writing were Nos. 46518-21, built at Swindon, and Nos. 78000-5 from Darlington. Also added to stock were 0-6-0Ts No. 8430-4 and 9488-9. All the ex-W.D. 2-8-0s allocated to this Region have been renumbered; the last was No. 90271, formerly 77388.

Withdrawn 4-6-0 express locomotives include Nos. 2933 *Bibury Court*, 4044 *Prince George* and 4048 *Princess Victoria*.

Five 4-4-0s of the 90xx series were allocated to 82A, Bristol, early this year, when No. 9018 was reported to be working from Oxford. From the Birmingham area comes news of B.R. class 2 2-6-0s and class 3 standard 2-6-2Ts working local trains. The large G.W.R. type 61xx 2-6-2Ts go to Stafford Road Works, Wolverhampton, for repair and overhaul, being regularly seen in service throughout the London Division including duties based on Oxford Depot.

To obtain up-to-date and prompt information in plan form of sections of railway track, especially in country or somewhat inaccessible districts, the aerial survey photographic method is being used to an increasing extent. Lines in North Devon have recently been so covered, the resulting plans showing accuracy of detail up to 40 feet to the inch.

Over the Scottish Border

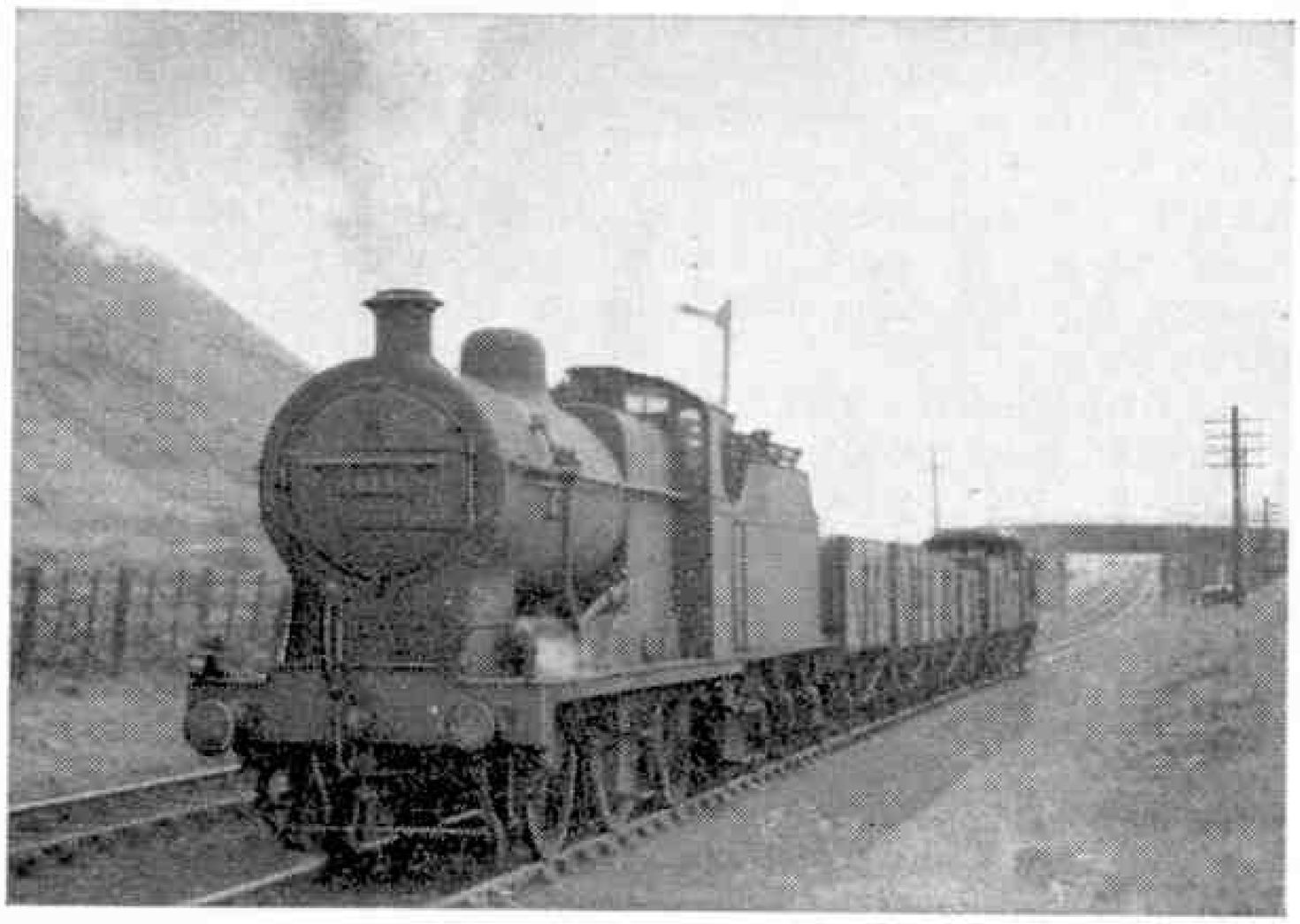
Duchess and Clan Pacifics run over the former Glasgow and South Western Glasgow-Carlisle route via Kilmarnock, sometimes included on double-headed expresses with various locomotive combinations, as well as via Beattock. K2 2-6-0s numbered 61739 and 61766, have moved from the Lincoln district, E.R., to Thornton Shed, 62A. V2 2-6-2s Nos. 60818 and 60900, arrived at St. Margarets, 64A, from the south in exchange for Nos. 60814 and 60821, moved to King's Cross.

The first of the ex-North British 4-4-2Ts to be withdrawn was No. 67471 of the older series now classed C15, introduced in 1911. The final example of the Highland Railway's "Ben" inside cylindered 4-4-0s, lately withdrawn, was No. 54398 *Ben Alder*, built in 1898 by contract as one of 20 entering service between that year and 1906. There were the "small" and "large" Bens well known in the far north, named after mountain peaks called Bens. The old N.B.R. and earlier Scott 4-4-0 classes, known recently as D31 and D29 respectively were rendered extinct by withdrawal of Nos. 62281 and 62411, *Lady of Avenel*.

New and Reconditioned Rolling Stock

More of the British Railways standard coaches are appearing in many of the principal trains. The interior equipment is plain, but smart and comfortable. It has not been possible to build by any means as many new passenger train vehicles as had been hoped, so as an alternative, reconditioning and modernisation of carriage interiors is being carried out with good results, on Hastings steam services for example.

For the busy residential services on the Fenchurch Street-Southend-on-Sea route now controlled by the Eastern Region, almost completely reconstructed sets of four-coach units are being brought into use including, for the first time on this line, bogie thirds, seating 80, of the open saloon type.



L.M.R. class 4 standard freight 0-6-0 tackles the 1 in 30 Chequerbent incline with six wagons and a van. This steep bank is on the Bolton-Leigh-Kenyon line. Photograph by W. S. Garth.

London Airport at Night

by John W. R. Taylor

"ATTENTION please. Will passengers for British Overseas Airways' *Monarch* flight 509 take leave of their friends in the lounge and follow the green lights to Customs and Emigration."

I watched little groups of people come to life all down the long, low passenger lounge. Cups of coffee were gulped hastily, and everywhere men and women began changing into mobile Christmas trees, festooned with coats, scarves, blue plastic overnight bags, magazines, cameras and all the other odds and ends needed during a long Atlantic flight. Soon farewells were over and the swing doors marked "Customs Hall—Passengers Only" were left flapping to and fro behind them.

It was my cue to move too. Not, unfortunately, with the passengers, through Customs to the big Stratocruiser waiting outside to whisk them through the night sky to New York; but towards the Control Tower, at the start of my tour of parts of London Airport which passengers seldom see, but which play a big part in ensuring safe and speedy flight to the four corners of the earth.

The illustration at the head of the page shows a line-up of aircraft at London Airport at night. This photograph and those on the opposite page are reproduced by courtesy of British Overseas Airways Corporation.

As I climbed the metal stairs outside the Tower I could see on my left the airport buildings, brightly lit, filled with hundreds of people whose work would soon send on their way the air liners which squatted under the arc lights like great birds about to leap into the air. On the far side of the airfield were the maintenance hangars that I was to visit later, and to my right the long-range radar scanner turning slowly round, searching the sky for incoming and outgoing aircraft.

Between myself and the distant hangars was a maze of coloured lights, blue, red, green; and in the distance a beacon flashed the London identification letters "V.A." I soon discovered the reason for all the different coloured lights, because the first thing I saw on entering the "holy of holies"—the glass-walled traffic control room at the top of the Tower—was a large panel displaying a key to the airfield lighting and switches to operate every set of lamps.

The blue lights, it appeared, marked the edges of the concrete parking apron and the airfield perimeter tracks. The high intensity green lamps marked main taxying routes. White lights lined the runway in use, and red lamps were part of the centre line and bar airfield approach lighting. All very easy—when you know the key!

I was surprised to find only one young man—Mr. Peter Borchards—in this nerve centre of the airport, especially when he told me that in Summer time, even at night, aircraft take off and land at London Airport at the rate of about one every five minutes. When I was there, the average was around 30 landings and take-offs between 8 p.m. and 1 a.m.; but I chose an interesting time, because the big transatlantic aircraft were preparing to leave.

Suddenly, a metallic swish, followed by a nerve-shattering clang behind our ears, told me that Mr. Borchards was not really so isolated as he seemed. A collection of narrow paper strips, giving details of aircraft waiting to take off, had arrived by pneumatic tube from "Flight Clearance." Weather reports arrive every half-hour in the same way, and there is another pulley and wire communication system from "Approach Control" in the room immediately under the main control room.

I was left in little doubt that air traffic controllers earn their money. Every few seconds new messages arrived, telephone bells rang, aircraft called "London Tower" over the radio, requesting clearance to taxi or take off, details of the route they were to follow, and the weather. The driver of a motor van asked permission to cross the main runway. And I could hear a faint background noise of aero engines.

"George Love clear to taxi to holding point," said Mr. Borchards over the radio, and I saw a Stratocruiser begin to lumber forward, towards a green taxi track leading to the far-off main runway. A glance at the flight plan information slips showed me that "George Love" was B.O.A.C. Stratocruiser G-AKGL *Cabot*, bound for Gander and New York, via Bristol and the "Great Circle" route over the Atlantic. It was, in fact, flying the luxury *Monarch* service, carrying the people with whom I had drunk coffee in the passenger lounge half an hour earlier.

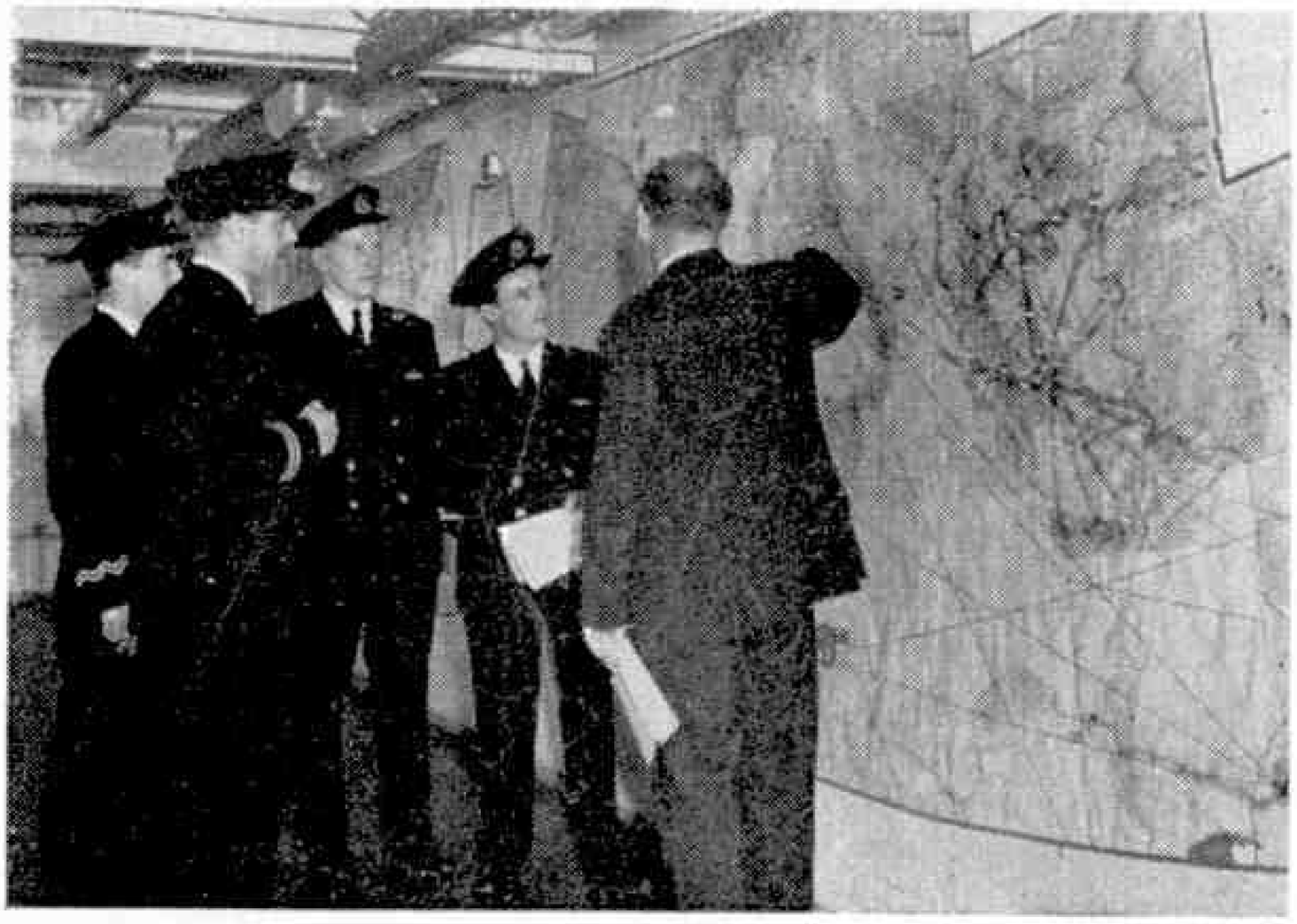
As I heard its engines roar for take-off and watched its winking navigation lights climb up into the night sky, other air liners were already asking for clearance to follow it—a K.L.M. Convair PH-TEI, T.W.A. Constellation N 6012C and Air France DC-4 F-BBDQ, all due to take off within a few minutes of each other for Amsterdam, New York and Paris.

B.O.A.C. Speedbird Stratocruiser on the apron at London Airport preparing for a night crossing of the Atlantic.

It seemed strange to think that the voice on the radio by my side was coming from a Stratocruiser, already several thousand feet high and several miles away, flying down Green 1 Airway to Bristol. And the "Delta Quebec" call-sign of the DC-4, mingled with the "George Love" of the Stratocruiser, reminded me that the air controller's life is complicated by the fact that two different phonetic alphabets are in use at the present time.

I left Mr. Borchards to do his very important job in peace, and had a quick look at the "Approach Control" room, with its green radar scanners, where all machines in the Airport control zone are sorted out. Incoming aircraft can be "stacked" at varying heights to await landing instructions and outgoing aircraft given their tracks to the coast.

From there I went to the Crew Briefing Room, to which each aircrew has to report before take-off, to file complete details of their flight plan and to receive their NOTAM bulletins. These give up-to-date



Air liner crew being briefed before take-off.

Outside the B.E.A. hangar at London Airport, Foreman G. Newstead (left) discusses the night's work with Chargehand S. Walker. Photograph by courtesy of British European Airways.

information on the serviceability of radio navigation aids along their route, together with special notes on "flight hazards," including areas where military firing practice is carried out or where air exercises are in progress.

All countries belonging to the International Civil Aviation Organisation (ICAO) are bound to supply such data regularly to maintain the safety of air travel.

To supplement the NOTAM bulletins, which apply mainly to regular flights, there were big maps on the Briefing Room wall, displaying visually recognised airline routes throughout the world, flight hazards and data on radio aids. These are used mainly to brief crews for non-scheduled charter flights along unusual routes.

I did not see the Meteorological Briefing Room, but glanced in the busy teleprinter room, where messages are received from every airfield throughout the world, before driving round the long perimeter track to B.O.A.C.'s Constellation and Stratocruiser maintenance hangars.

B.O.A.C. do only between-flight servicing at London, as they have a base at Bristol for more extensive maintenance work. Nevertheless, there were nearly 60 men at work, several of them getting Stratocruiser G-ALSD *Cassiopeia* ready for the following night's transatlantic service.

I was able to look over her, entering through the 14-seat lower deck cocktail lounge, up a spiral staircase into the spacious, comfortable main cabin and then forward to the flight deck, complete even to a streamlined pencil sharpener by the navigator's table!

Next port of call was the magnificent new B.E.A. hangar—a single-span structure 900 ft. long, containing five big servicing bays, offices, workshops, canteen and drawing offices. Here B.E.A. can do everything up to a full Certificate of Airworthiness check; and I saw one Viking with its cabin stripped out, tailplane removed and engines out, undergoing a complete 1,000 hr. overhaul.

It is difficult to describe adequately the

The servicing of aircraft goes on throughout the 24 hours at London Airport. Here the night duty engineers are seen working on a B.O.A.C. Stratocruiser. Photograph by courtesy of British Overseas Airways Corporation.

superb, practical design of this new B.E.A. hangar, with its hundreds of fluorescent lights making the interior as bright as day, and its heated concrete floor. Suffice it to say that it is the largest pre-stressed concrete building in Europe, if not the world, has a floor area greater than three football pitches and is the envy of every other airline. Yet it is only half the story, for another, similar hangar is being built in parallel with it, and the two together will be big enough to cater for the whole of B.E.A.'s fine new fleet of 21 Elizabethans, 26 Viscount 701s and 12 Viscount 801s.

I was shown round by Mr. G. B. Newstead, foreman of the "night shift," who was obviously very proud of the hangar, the aircraft and B.E.A. as a whole. He showed me over Elizabethan G-ALZV *Earl of Leicester*, which must surely be one of the most comfortable medium-range air liners in the world, and a worthy replacement for the well-loved Vikings. Outside, I saw the first of B.E.A.'s new Viscount fleet, and watched an "outside run gang" testing the engines of a Viking.

Mr. Salmon, Manager of the R.S.P.C.A. Hostel at London Airport, attending to a sick monkey passenger.

Certainly on this side of the Airport, as on the other side, there was no question of work stopping at 5.30, and I wished I had time to visit the hangars of foreign airlines and B.O.A.C.'s Comet, Hermes and Argonaut fleets. But I had a date at the most unique building on the Airport —the R.S.P.C.A. Animal Hostel which was opened last November.

On the way to the Hostel I passed the big freight sheds, where the 15,000 tons of air cargo that pass through London Airport every year are handled. I was not allowed inside, because the freight sheds are a "Customs area." But there was no such restriction at the Animal Hostel, which is the only one of its kind in the world, cost £20,000 to build, and is complete with everything possible to make animal travellers comfortable and happy. Its importance cannot be overestimated, for one out of every nine airline passengers today is an animal and they are bringing in a lot of useful money in fares.

The Hostel is run by the Manager, Mr. Salmon, with a staff of one young lady and two men, one of whom kindly showed me round. All are trained clinic assistants able to deal with every kind of animal from a budgerigar to an elephant. Since the Hostel opened it has received lion cubs, tigers, ostriches, hyenas, a black panther, dogs, cats, birds and monkeys, 900 at a time. It contains special accommodation for every species, with rings set in concrete for elephants, stalls for horses, with quick release fastenings in case of fire, and kennels for dogs, complete with built-in lamp-posts! Every kind of food is stocked, and the Hostel is complete with a scrupulously clean, beautifully-equipped operating theatre and its own animal ambulance.

The evening I visited it was not a particularly exciting one. One solitary happy little dachshund made enough noise for a whole kennelful of dogs; the bulk of the other guests comprised 4,000 canaries, travelling from Holland to New York. But there was, literally, a cat among the pigeons. The cat was a traveller, but the pigeons are residents—at least Charlie, the gentleman, is. He goes for daily walks along the corridors and occasionally pops out for a breath of fresh air. A few weeks ago he popped back complete with a wife—a wild pigeon from outside—and since then she has shared his cage.

Leaving the Hostel, I could not help recalling my first visit to London Airport in 1946, when an American traveller, sighting the brown tents which served as airport buildings, said "Gee, where's the elephants?" Pretty soon Mr. Salmon may be able to reply "Elephants? Certainly, follow me."

Across the Firth of Forth

Tank Landing Craft in Peacetime Service

By J. M. Cramb

MANY of us during the war were familiar with the variety of specially constructed ships used in amphibious operations throughout the world. While large numbers of these vessels were sunk or damaged, or broken up for scrap after the war, some survivors still sail the seas, the thunder of guns and the flame of battle now a distant memory, and it is pleasant to come across them.

On account of their construction and ability to operate in shallow waters, the ships known as LCT's —their full name is Landing Craft Tanks— were found after the war to be very suitable for use as vehicle and pedestrian ferries. It was therefore with this end in view that a Scottish company, Forth Ferries Ltd., Edinburgh, obtained four of them, built in 1942 by P. and W. MacLellan Ltd., Glasgow, and placed them in the hands of the Clyde shipbuilders James Lamont and Co. Ltd. for conversion. The ships in their new role have an approximate gross tonnage of 460, and a length of 180 feet with a beam of 38 feet. Power is provided by two four-stroke single-acting twelve-cylinder diesel engines made by Davey Paxman and Co. Ltd., Colchester, and is transmitted to twin screws making for ease of handling in harbour waters.

It may be as well to give some details of the Firth of Forth area in order that the advantages of the service these vessels can provide can be fully appreciated. Edinburgh is on the southern coast of the Firth, with the world-famous Forth Bridge nine miles upstream at South Queensferry. This bridge is used exclusively by the railways and the nearest road bridge across the Firth is 17 miles further west at Kincardine, a total of 26 miles from Edinburgh. There is a long established ferry service alongside the Forth Bridge, but the use of this entails a journey of nine miles from Edinburgh as compared with three to Granton, the terminal for the service described in this article, and furthermore the Queensferry passage is greatly overburdened during the summer tourist season.

The northern terminal of the ferry on which these craft were used is Burntisland, Fifeshire. While the vessels retain the well-known outline, considerable alterations were carried out both internally and externally, as can be seen from the accompanying photographs. Electrically-operated ramps are fitted amidships for vehicles and passengers to embark, as the wartime system of loading and unloading through openings in the bows is impracticable. The ferries tie up alongside piers and do not discharge on open beaches as they did in their original capacity.

The open main deck affords accommodation for approximately 40 vehicles, depending on size. Large commercial vehicles such as furniture vans and heavy lorries travelling between Leith docks and the Fife coast provided a steady traffic on weekdays, while at week ends private cars, caravans and pedal and motor cycles were the principal occupants.

Glenfinnan alongside the landing stage at Granton. This vessel is one of the converted Landing Craft Tanks that are used on the Granton-Burntisland ferry.

Eriskay enters Granton Harbour. The coast of Fife can be seen in the distance.

On a warm summer day it is pleasant to stand on the open deck during the crossing, admiring the rich panorama of sea and hills and the crisp blue waters of the Firth, dotted with yachts and fishing boats. But the weather is not always good, and as this was meant to be an all-the-year round service, enclosed accommodation is provided aft of the vehicle deck and beneath the bridge.

On account of the shallow draught of the ships there is a tendency for even a moderate sea to make itself felt on board, but there can be no doubt at all that they can cope with the worst the weather clerk produces.

Proof of their seaworthiness was provided on Sunday the 30th December 1951, when the *Flora Macdonald* sailed from Granton in a rising gale and on account of the severe conditions found it impossible to enter harbour on arrival off Burntisland. The captain decided to return to Granton, but the wind, later officially reported to have been blowing at over 100 m.p.h., and the raging sea left no alternative but to run with the weather downstream, the ship finally heaving to in the lee of the island of Inchkeith, some three miles east of the course followed in a normal crossing. By the evening the weather had abated and the *Flora Macdonald*, in spite of offers of assistance, sailed back to Granton under her own power and berthed safely shortly after eight o'clock, having been at sea for nearly ten hours.

View of the Glentnnnan swinging out from Granton landing stage.

Incidentally, all four ships went through what might be called a proving run when they were delivered from the builders, for, although the Forth and the Clyde are not many miles apart by land, there is no direct water communication capable of taking ships of this size. The vessels therefore had to sail round the north of Scotland.

The conversion from LCTs was completed, and the ships were delivered to the owners in 1950 and the new service commenced on 15th March 1951. In normal conditions a speed of eight to nine knots was maintained for the five-mile crossing, the time from terminal to terminal being 40 minutes. As radar was carried, very little if any delay was caused by thick weather or darkness, a point of the utmost importance to prospective travellers. There were sailings from Granton and Burntisland at 40 minute intervals throughout the day and into the late evening every day, including Sundays.

The service was suspended during last winter.

Careers on our Railways

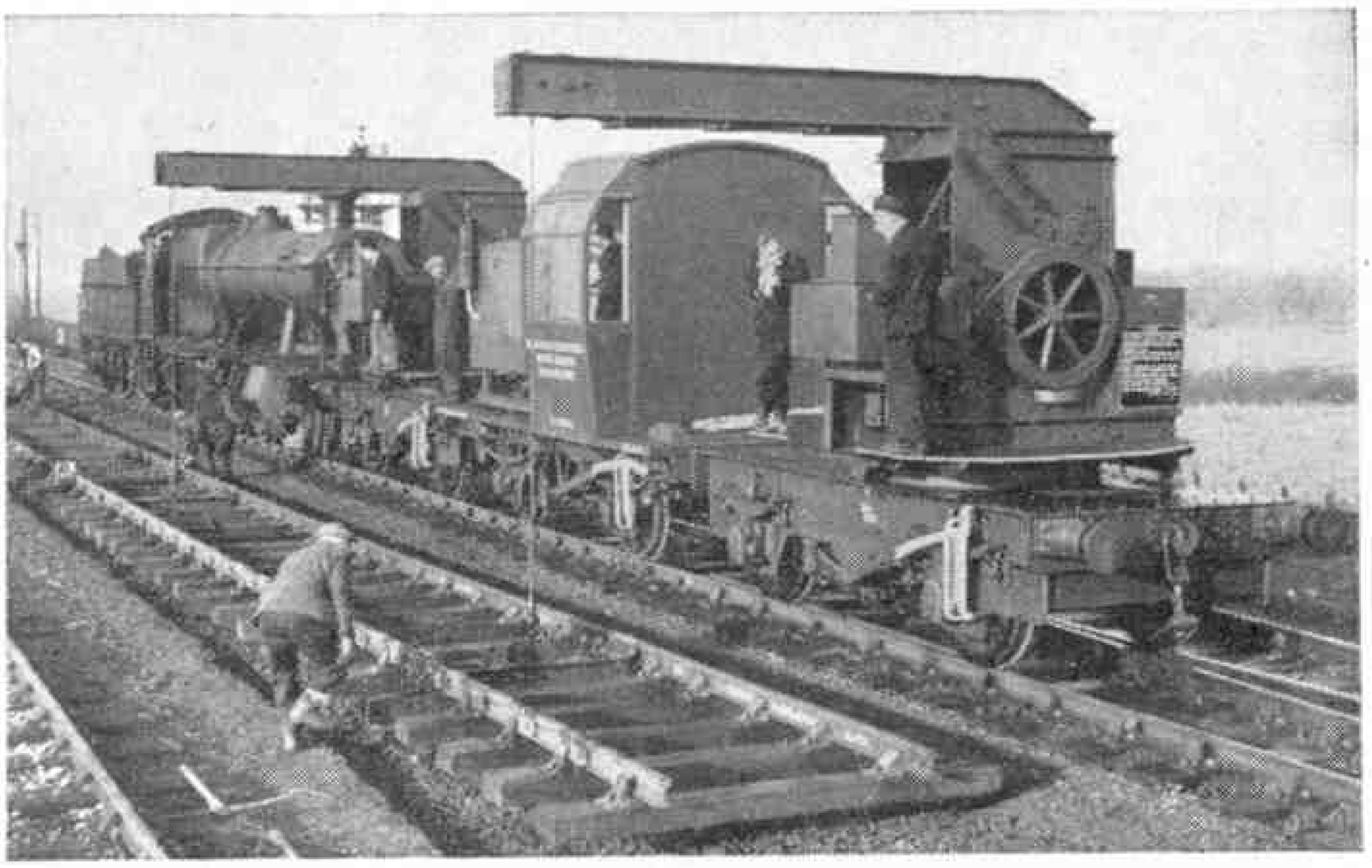
By the Editor

THERE are few of us who are not fascinated and even thrilled by trains, and this of course applies in special measure to readers of the *M.M.* There is reason enough for this in the trains themselves, but our interest in railways springs from deeper causes. To begin with, the railway was born in Great Britain, and we still enjoy stories of the pioneers who started and built up this highly important part of modern transport, which rapidly spread throughout the world. Then we cannot escape from the railway in Great Britain, for our island is covered with what must be one of the closest networks of lines in the world.

Railways indeed are an essential part of our life, for they not only provide means of moving about for ourselves, but also are the medium through which most of our food reaches us, raw materials go to our factories and the products of these are distributed. Taking them away from us indeed would bring our island almost to a standstill, in spite of the great part now played by road and air traffic.

Yes, the railways must run, and this means that there must be railwaymen. I wonder how many of you know just how large our railway force is! Probably it will be a surprise to most of you to learn that there are more than 600,000 railway workers in the pay of British Railways. Their jobs vary very widely in character, beginning with those who direct and control the railway systems and ending with the engine cleaners, apprentices and other beginners in the ten main groups into which the staff is classified.

Let us just run over these groups. To begin with there are the men who run our passenger and goods stations, those concerned with signals and communications generally, and the staffs of the motive power depots, numbering among the last named the drivers and firemen who are the chief heroes of the younger railway enthusiasts. The provision and maintenance of track, bridges and buildings is the work of another group, and the mechanical engineering staff, who build our locomotives and trains, form yet another. There are also an electrical section, a group concerned with B.R. road traffic, and another responsible for what is called outdoor machinery. Last, but by no means least, comes the clerical section. All departments include clerks on their staffs, and clerks are to be found in every office, from the small country station up to the Railway Executive headquarters itself.

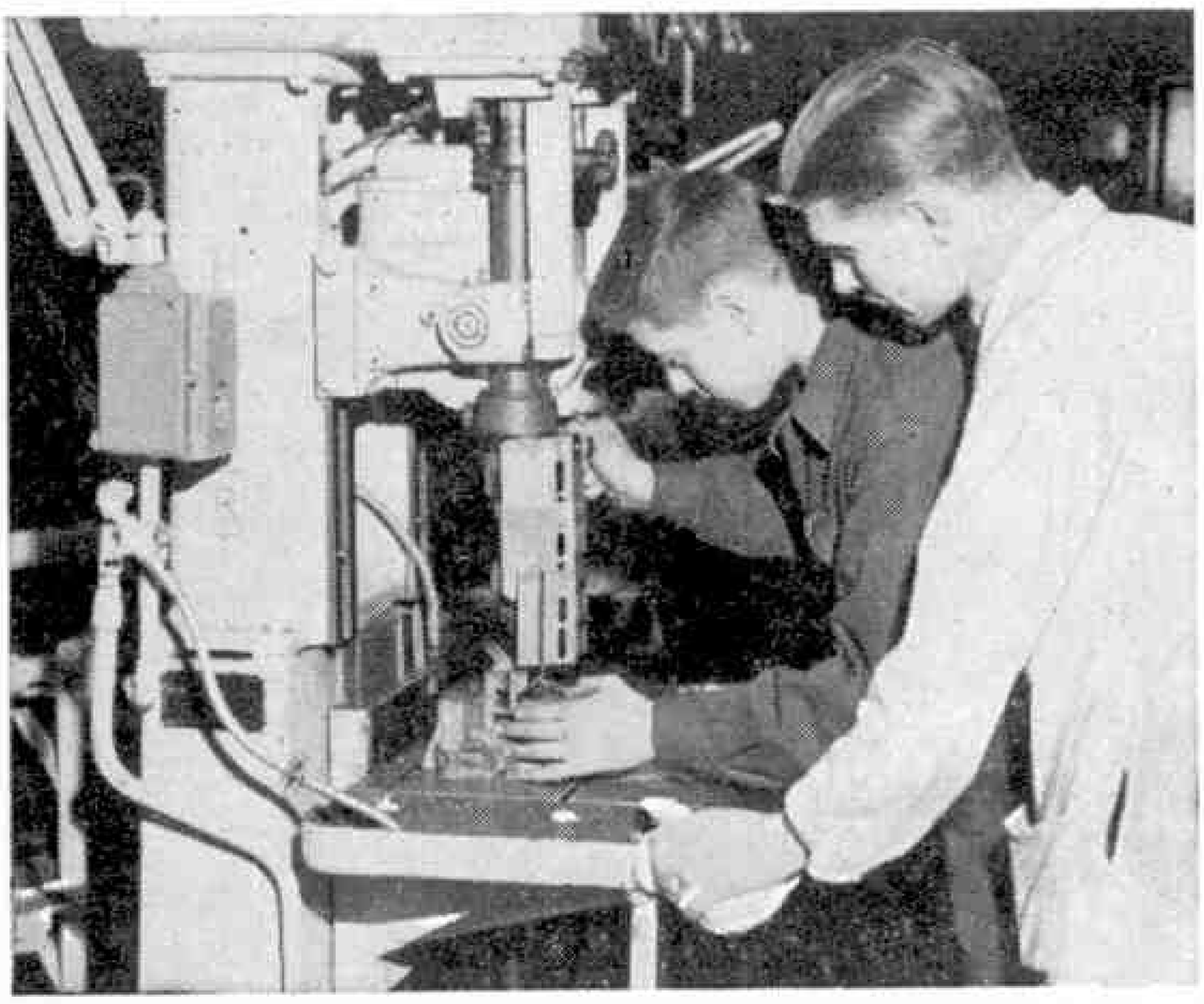


Laying and looking after the track of a railway is the work of the Civil Engineering Department, which also is responsible for bridges, tunnels, station buildings and other railway structures.

The newcomer to railway service enters one of these groups, and usually remains in it throughout his career, although a change can be made in its early stages, provided that the boy concerned is suitable for the new group he seeks to enter. Promotion too may lead from one group to another.

For the information of Youth Employment Officers, Headmasters and others interested in details of careers in

various industries, the Railway Executive has prepared a Careers Booklet giving information on the variety of work available in the railway service. This booklet may be obtained from the Regional Staff Officer of the particular Region in which you live; the same officer will be pleased to offer advice to or consider applications from boys interested in railway work of one kind or another.



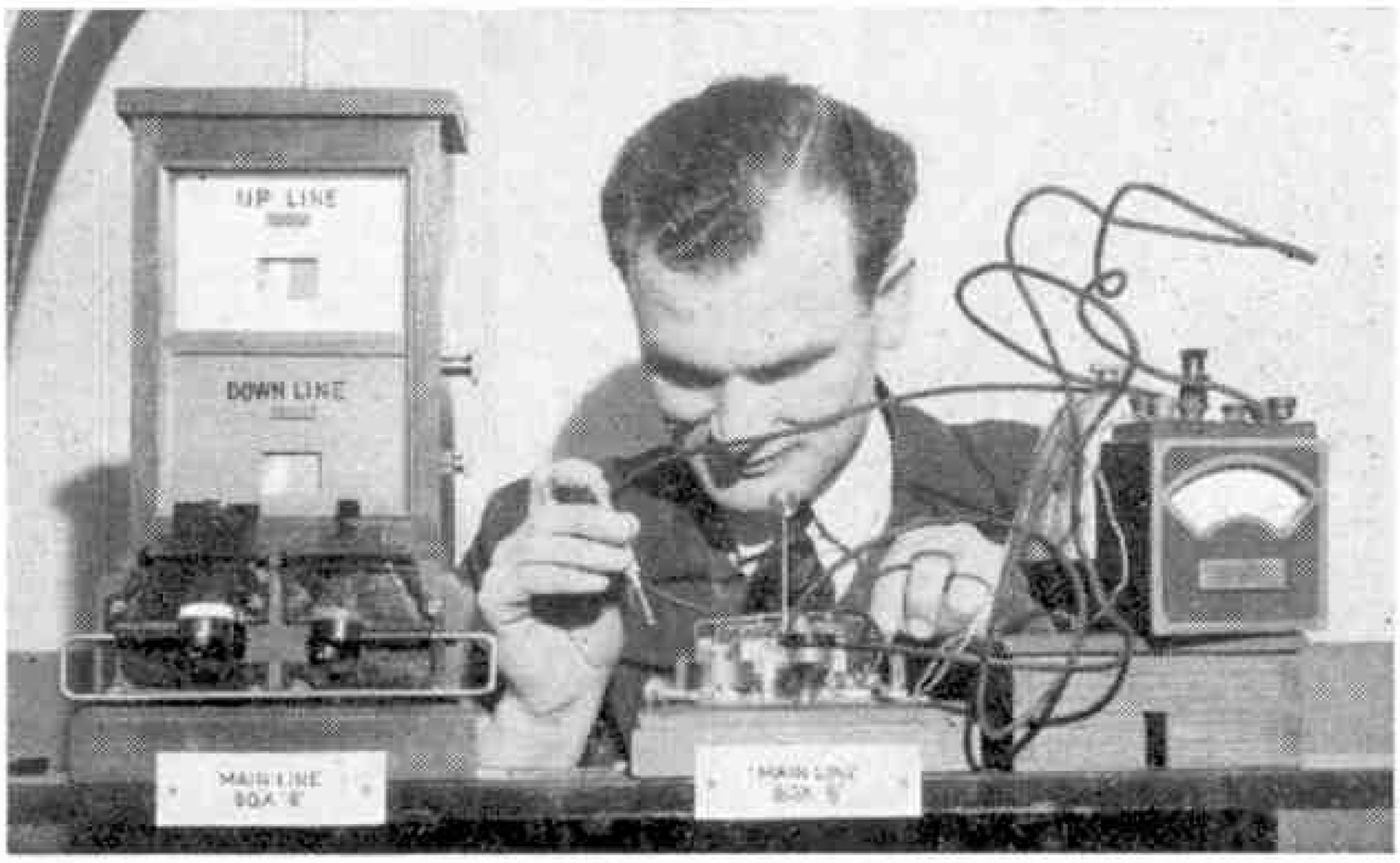
An apprentice under instruction in one of British Railways locomotive and carriage and wagon workshops.

It is interesting to see how a newcomer is trained in the work of the group he has chosen. For instance, let us look at the department concerned with the building and repair of locomotives and all types of passengers and goods railway vehicles. This department differs from most of the others in that its work is carried on at central workshops, instead of being spread all over the country, as passenger and goods stations are for example. Its workshops therefore are to be found only in certain towns and cities, such as Crewe, Swindon, Doncaster and Derby, to name only a few. Railway enthusiasts will readily add to this list, for to them the names of railway workshops are household words.

There are three ways of entering this department. The first is to become a trade apprentice when 15 to 16 years of age. The list of trades that are open is a very long one, including fitting, turning, moulding, sheet metal working, boiler making and so on, and these offer a very wide choice for the trade apprentice. His term of apprenticeship is completed when he is 21, and if he proves a good craftsman it is only rarely that no room can then be found for him in the workshops. If he has the necessary ability and application he can rise in time to such positions as Inspector, Examiner and Shop Foreman.

Boys who have gained the General Certificate of Education, or its equivalent, with passes in suitable subjects, can enter the department as engineering apprentices, and this course is open also to trade apprentices up to the age of 18 who have shown marked ability and keenness. These apprentices receive general training from the railway in all trades connected with the department, and are expected to study recognised engineering subjects at a technical college, for which purpose time off with pay during working hours is allowed.

The best of the engineering apprentices are chosen as engineer pupils, and this provides the third way of entering into the department. Those who are selected for it receive an additional year's training and are favourably placed (*Continued on page 272*)



Efficient signalling and telecommunications are essential to safe railway working.

Air News

By John W. R. Taylor

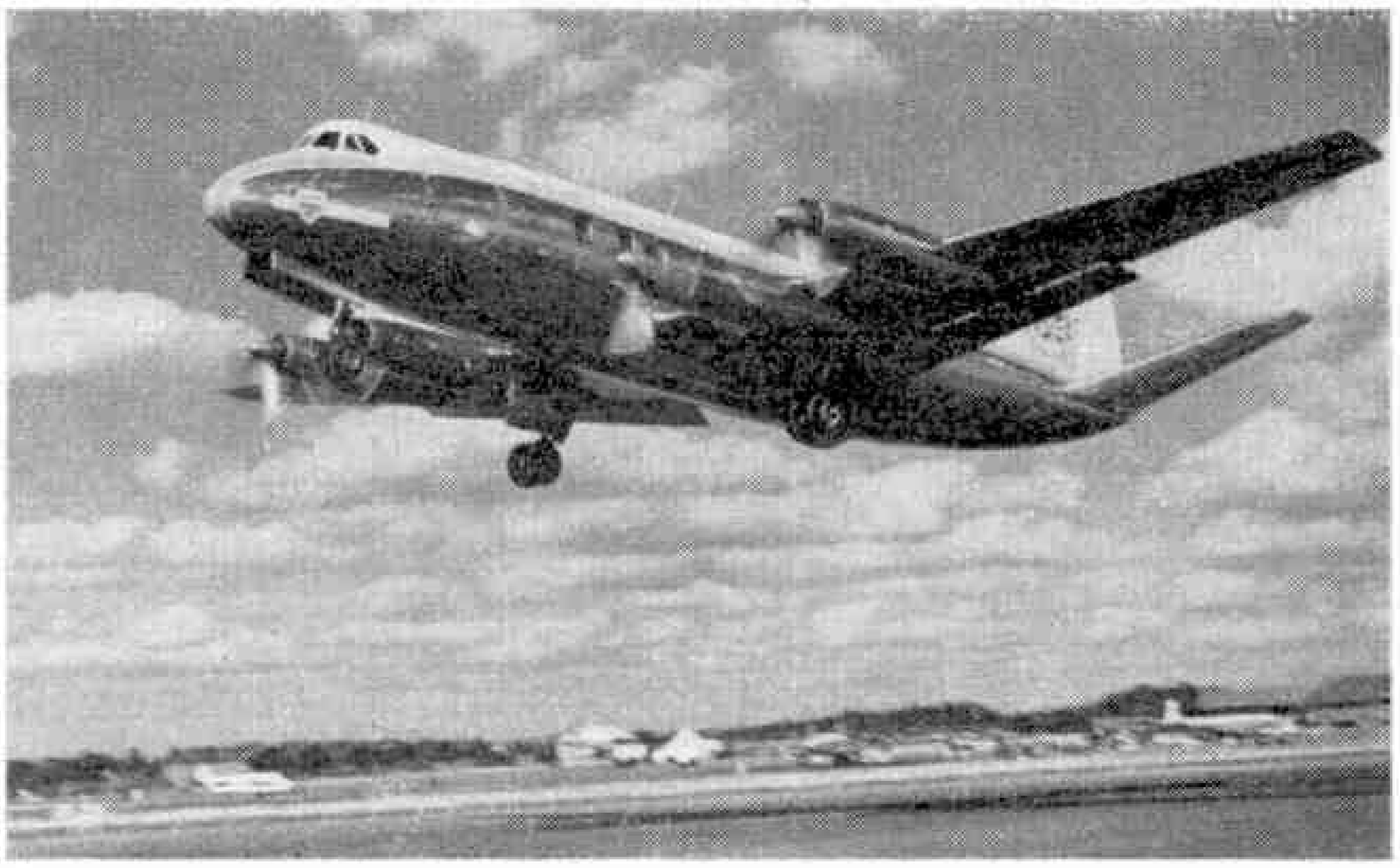
Viscounts in Service

By introducing their first scheduled services with Vickers Viscount 701 propeller-turbine powered air liners last month, B.E.A. made the most revolutionary advance in European air travel since the first commercial flight was made from London to Paris nearly 34 years ago.

Passengers now travel from London to Zurich, Rome, Athens, Istanbul and Cyprus 100 m.p.h. faster than last year; yet fares have been reduced by about one-fifth because, except for their "Silver Wing" and other First-class Elizabethan services to Paris, B.E.A. is an all-"tourist," cheap-fare airline. "Tourist," in this case, certainly does not mean that passengers are packed like sardines in a second-class aircraft, for the Viscount's 48 passengers experience all the benefits of quiet, smooth jet-travel and, on the Zurich run, can have a multi-course hot luncheon for only 8s. extra.

By July, Viscounts will also be operating to Geneva, Copenhagen and Stockholm, shortening flying times by nearly a third and releasing more of B.E.A.'s comfortable Elizabethan (Ambassador) piston-engined air liners for services to Amsterdam, Brussels, Western Germany and a new internal service from London to Manchester.

This is only a start, for B.E.A. recently ordered a further fleet of 12 of the new 66–82 seat Viscount 801s, at a cost of about £4,000,000. These "stretched" Viscounts will be 160 in. longer than the Type 701, and will be able to take off at a loaded weight of 65,000 lb., following development by Rolls-Royce of a new (R.Da.5) version of the Dart propeller-turbine, giving the equivalent of 1,690 h.p.



The first of British European Airways' Discovery class Vickers Viscount air liners. Photograph by courtesy of Vickers-Armstrongs Ltd.

Sycamores for Royal Australian Navy

Just before the light fleet carrier H.M.A.S. *Vengeance* sailed for Australia earlier this year, she took delivery of three Bristol Sycamore Mk.50 helicopters, which the Royal Australian Navy will use for carrier-borne air-sea rescue and general communications duties. Choice of the Sycamore followed special trials aboard H.M.S. *Triumph*, during which the helicopter proved itself able to take off and land satisfactorily even when wind speed over the flight deck rose to nearly 40 knots. On another occasion, the Sycamore was recalled to the flight deck from guard duties on the *Triumph's* starboard quarter, the rotor blades were folded and it was taken by lift to the below-deck hangar all within six minutes.

Compared with earlier types of Sycamore, the Australian Mk.50 has a 9 in. longer undercarriage, enabling it to land on rough, uneven surfaces; a hydraulically-operated winch in an open doorway on the starboard side of its fuselage, for hoisting casualties from sea or land; and mounting for an F.24 camera in its cockpit floor for aerial photography.

Going down! One of the three Bristol Sycamore helicopters aboard the aircraft carrier H.M.A.S. Vengeance being taken down by lift to the hangar below deck. Photograph by courtesy of The Bristol Aeroplane Co. Ltd.

Hush-Hush Racer

Surprise last-minute entry for the forthcoming international air race from Britain to Christchurch, New Zealand, is a special version of the Brigadier five-seat, twin-engined executive transport which the American Baumann Aircraft Corp. are producing, fitted with Custer Channel wings of the type described in the February 1953 *Meccano Magazine*.

By mounting two 225 h.p. Continental engines with pusher propellers inside the U-shaped wing roots of this CCW-5 Brigadier, Baumann expect to achieve a safe speed range of 10–275 m.p.h.

North American FJ-2 Fury carrier-based jet fighter. Photograph by courtesy of North American Aviation, Inc., U.S.A.

Carrier-Based Sabre

Although the sleek new naval jet fighter shown above is officially a North American FJ–2 Fury, one does not have to be a very expert spotter to recognise it as a carrier-based adaptation of our old friend the Sabre.

Powered by a 5,800 lb. General Electric J–47 turbojet and armed with four 20 mm. cannons, it is the most formidable carrier-based fighter in production anywhere, and perhaps the only one that could take on a MIG–15 with complete confidence. Nor is its 650 m.p.h. top speed achieved at the expense of range, for it can fly nearly 1,000 miles at a height of 45,000 ft.

The 8-ton FJ–2 is, of course, a very different aeroplane to the old straightwing FJ–1 Fury, which had a 4,000 lb. thrust Allison J–35 engine, six .50 in. guns and a speed of only 550 m.p.h. Compared with the shore-based Sabre, it has folding wings, heavier armament, a deck hook and an undercarriage nose-wheel that can be extended for more efficient catapult take-off. It has already completed deck trials aboard the U.S.S. *Midway*.

Another Battling Bantam!

Texans are traditionally tough, gun-carrying characters, so it is perhaps not surprising that the only armed, privately-owned aeroplane in the world is flown by a Texas rancher. He apparently became annoyed one day at the way eagles were preying on small animals on his ranch: so he mounted a 12-round shotgun between the undercarriage legs of his Piper Cub, ran a firing cable from the trigger up into the cockpit and took off for his first eagle hunt. He has since made up for a shortage of eagles by shooting at coyotes as well.

'Plane Eats 'Plane

In a recent Air News I referred to three Bristol Freighters which the Royal Canadian Air Force use to fly spares to their Sabre squadrons in Europe. One of them recently carried an outsize "spare" in the shape of a complete Sabre which had been damaged in a ground accident at Gros Tenquin, near Metz in N.E. France, where the R.C.A.F.'s No. 2 Fighter Wing is based. Even the Freighter found it difficult to "devour" such a load, but it succeeded, as the lower photograph on this page shows, and the Sabre was eventually flown back to England for complete overhaul and repair.

Flood Relief Operations

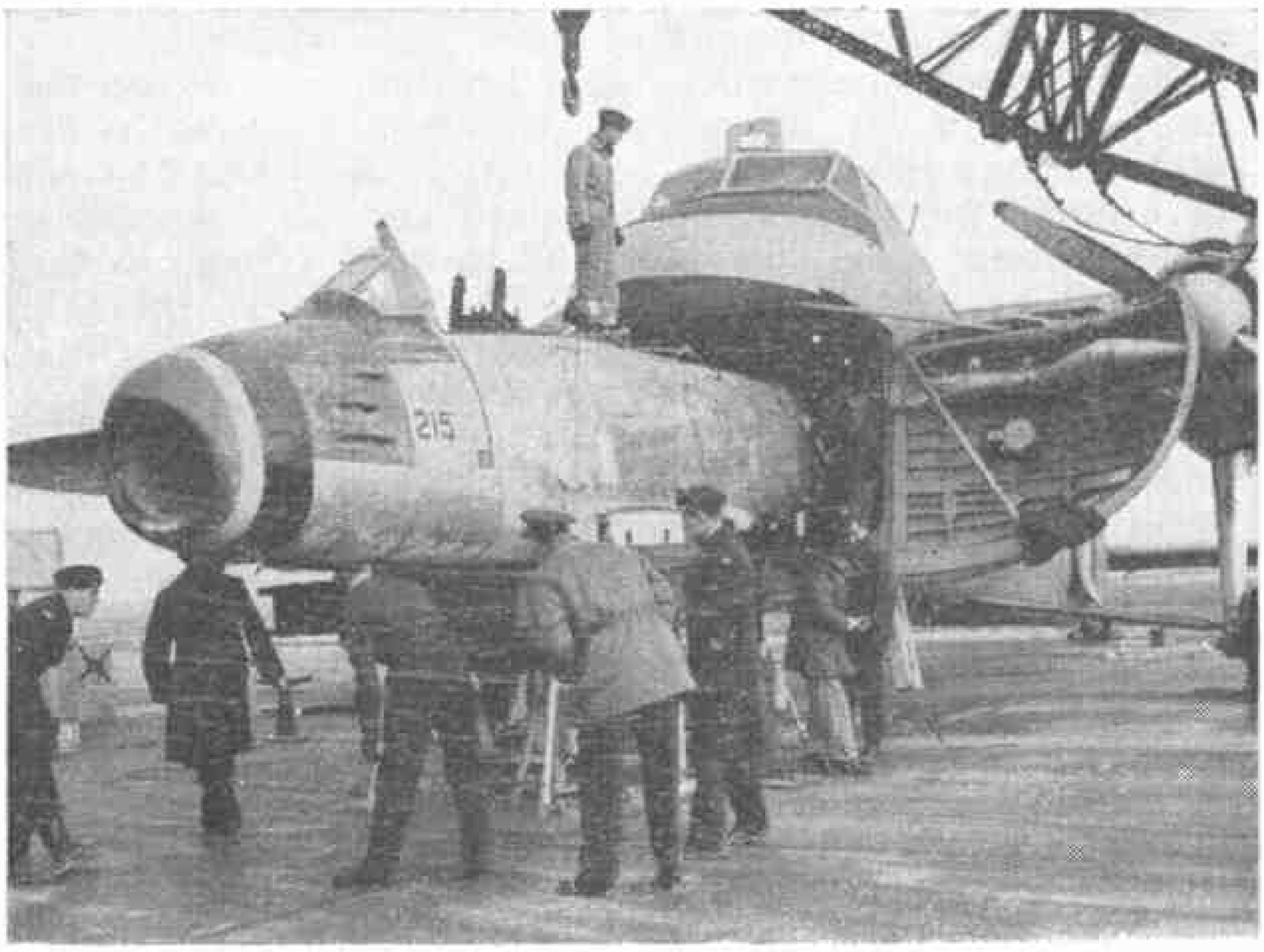
A summary of some of the great work performed by the Royal Air Force and Royal Navy during this year's tragic floods in Britain and Holland has been given in official communiques. Seven Sikorsky S–51 helicopters of the Navy's No. 705 Squadron rescued a total of 752 Dutch men, women and children, three dogs and one cat, in addition to assisting in communications work.

Mosquitoes and Lancasters of R.A.F. Bomber Command flew more than 40,000 miles photographing flooded areas of Eastern England in "Operation Floodlight," which was carried out with wartime operational urgency. Their 16,500 negatives from which 100,000 photographic prints were made, provided invaluable guidance for engineers responsible for rebuilding the sea defences.

Shortly afterwards, Transport Command played its part by flying 697 tons of sandbags, representing about 2,780,000 individual bags, from Switzerland, Italy, Norway, Denmark, and Portugal to Waterbeach and Manston in its Hastings and Valettas, with the help of Hastings of Coastal Command.

* * * *

The U.S. Air Force plan to build a second big Arctic air base in Greenland as soon as their £93,000,000 airfield at Thule has been completed. According to Norwegian reports, the new base will be further north than Thule, at Brilundsfjord, where there is already a 6,000 ft. airstrip for supplying a large U.S. meteorological station.



Loading a damaged Sabre jet fighter into a R.C.A.F. Bristol Freighter. Photograph by courtesy of Royal Canadian Air Force.

Your Camera During Coronation Week

How to Make Sure of Good Results

By J. J. Curtis

THE first week of June 1953 is going to be an outstanding period of history for every town and village, and the festivities that will mark the occasion of the Coronation are already receiving considerable consideration by local authorities. Illuminations, firework displays, processions and sports gatherings are being arranged, and street decorations are being carried out, to bring a festive mood to the smallest hamlets as well as the most important cities.

A good example of photography of illuminations, showing part of those at Southend-on-Sea during 1952. Our illustration is reproduced by courtesy of the Corporation of Southend-on-Sea.

What an opportunity for amateur photographers to secure an album of pictures that will by their very nature be of interest for the rest of our days and, if kept with care, will prove of historic interest to our grandchildren. Let us therefore give some thought beforehand to the best means of obtaining some really good shots.

First must come the question of what type of film, and here the best advice is to get three or four spools of a well-known make of "fast" such as the Ilford H.P.3 or Kodak Super X.X. Fast panchromatic will certainly be the most useful for the variety of subjects that will present themselves.

The next question, and possibly the most important, is that of exposure, and here perhaps we ought to deal first with illuminations. When you have made sure of the best position for taking these be certain to select an evening free from wind. In the case of set pieces of firework displays this is not so important, but where there are festoons of lights wind will cause a constant movement. Focussing must be dead sharp, so that each light comes out clearly without any halo.

Do not be afraid of slightly over-exposing. Where there is regular movement in the set piece use the largest stop and, if there is plenty of white light, then give the shortest exposure. If there is no movement then try f8 as a guide and give one or two seconds according to the amount of white light, but do endeavour to get some detail in the shadows and background; if you are troubled with folk dodging in front then be polite and ask them to stop just for a second.

Processions and gatherings usually will occur in daylight and you should pick your stand or window a day or two beforehand, if possible selecting a spot where there is a bend in the road. This should enable you to include a fairly extensive section of the show without much of it actually crossing your lens. If the weather is right then expose for 1/250th of a second with the open stop, but if the camera shutter does not give a shorter exposure than 1/100th use the f8. It is advisable to keep in mind that movement is present and that short exposures are necessary; this applies also to sports gatherings.

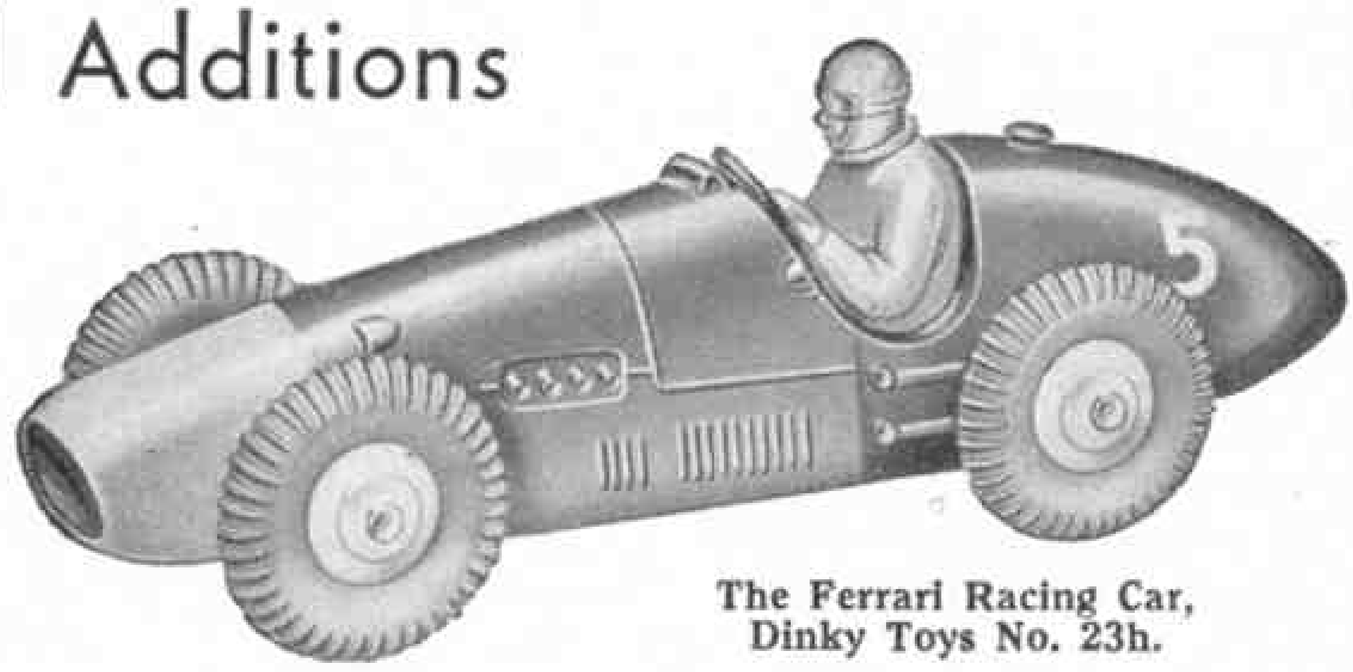
Do not exhaust your supply of films without securing some records of the floral and similar decorations, and especially triumphal arches. Already some plans of arches have been published in the press. Some of them are by well known architects and will be well (*Continued on page 272*)

DINKY TOYS

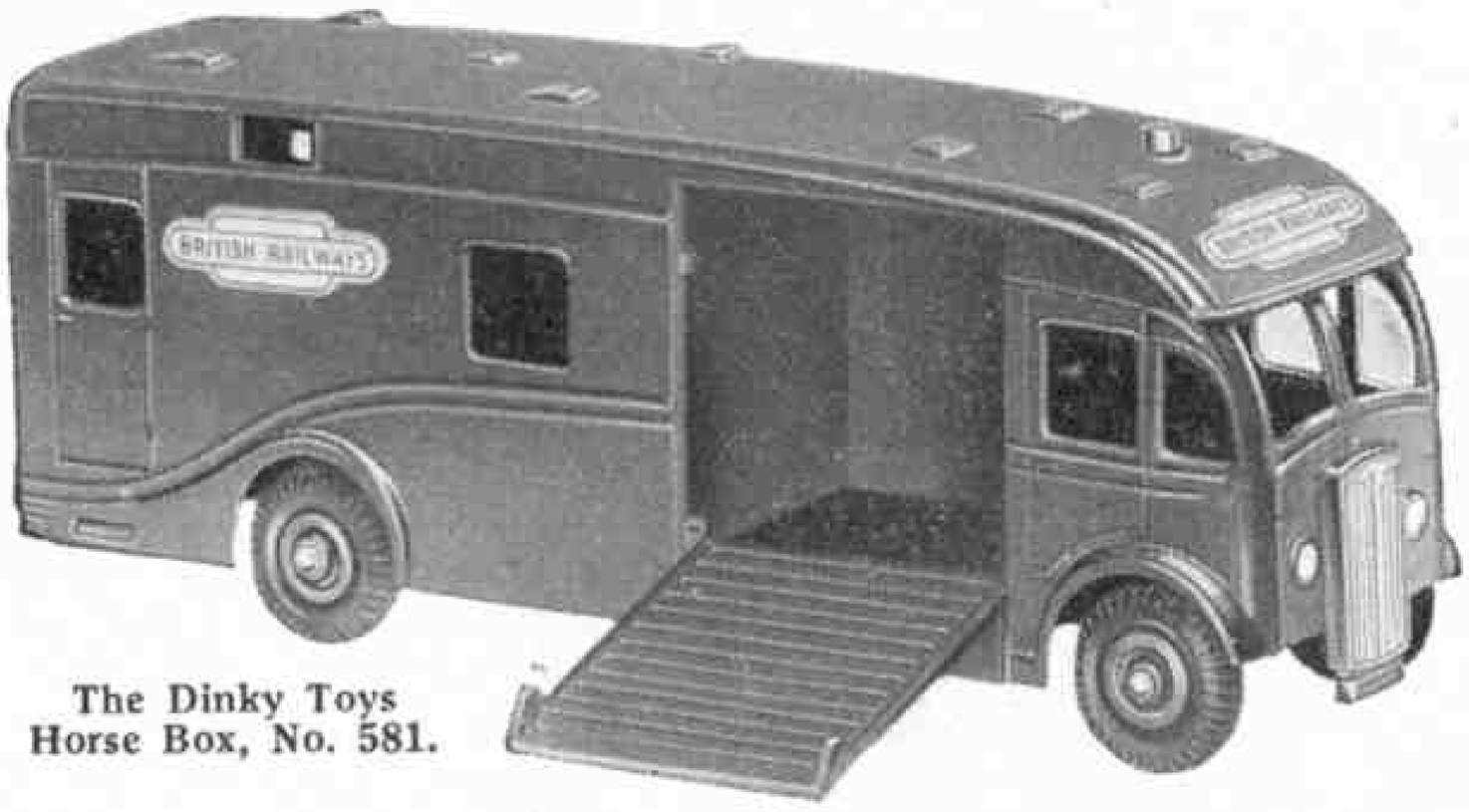
Three Splendid Additions

LAST month brought us two splendid new Dinky Toys, the Ferrari Racing Car and the Horse Box, and to them I can add another that has not previously been pictured or described in the *M.M.*, the Mobilgas Tanker.

Let us look first at the Ferrari Racing Car, which appears in the racing colours of the Argentine. Ferrari is a great name in post-war racing, with successes to its credit in many countries,



The Ferrari Racing Car, Dinky Toys No. 23h.



The Dinky Toys Horse Box, No. 581.

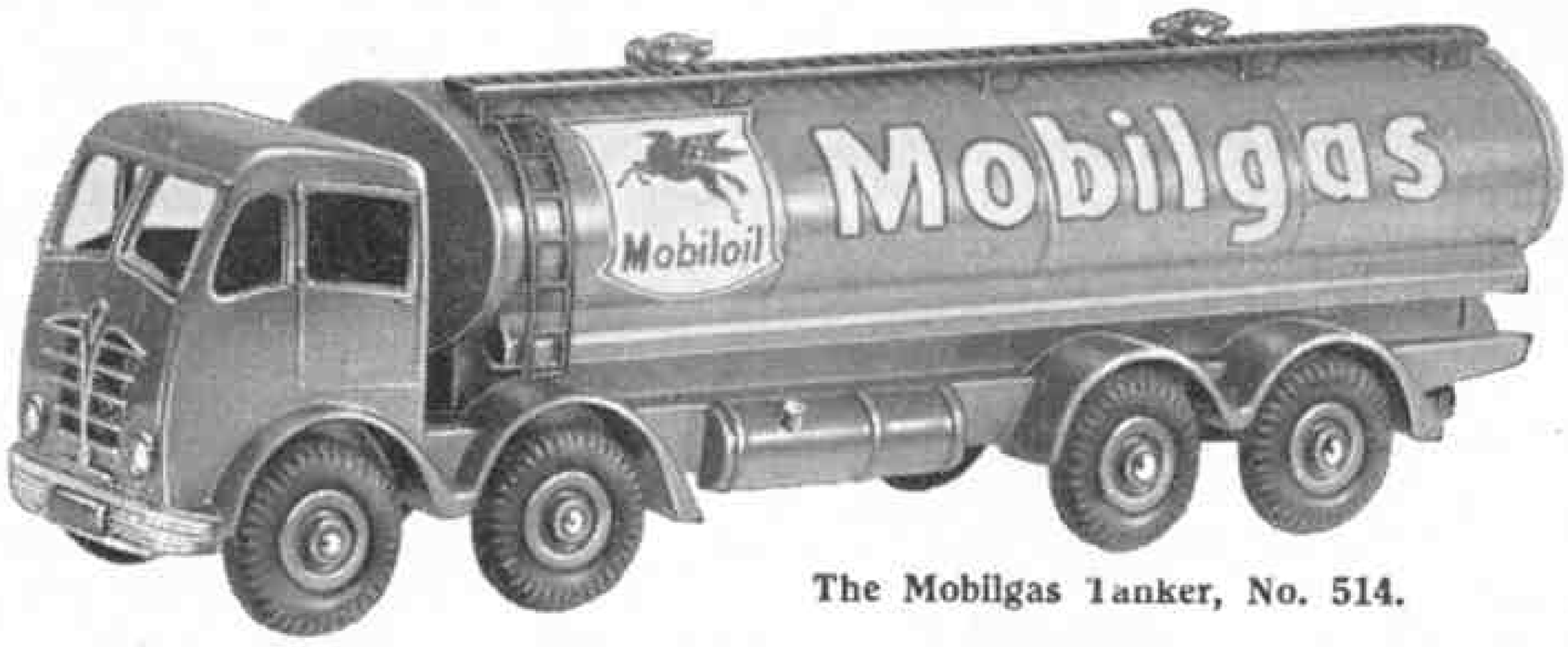
and the miniature will be really welcome to every Dinky Toys enthusiast.

Now let us turn to the Horse Box, a sheer delight. This is a large and handsome model beautifully finished in the colours of British Railways, and one has only to glance at it to realise that the horses it would carry would be bloodstock of high breeding!

The characteristic radiator and general appearance of the Maudslay chassis, on which its original is built, doors that let down on their hinges to form ramps, and ventilators, windows and other details clearly marked add to the realism of this fine production.

This brings me now to the Mobilgas Tanker. It is not necessary for me to say anything about the tanker itself, for this is the familiar Foden 14-ton. Its merits are well-known, and it is here made all the more attractive by the addition of the name of one of the petrols now available for motorists in Great Britain. The body and the cab are enamelled in bright red, while the ladder and walk along the top of the tank are in black. The lettering *Mobilgas* and the shield with the word *Mobiloil* are in white, with blue lining, and the shield carries the well-known winged horse in red.

By the way have you noticed that the tines of the Hay Rake described last month rise and fall automatically when it is hauled by the Dinky Toys Massey-Harris Tractor? This movement is effected by a simple but ingenious cam device.



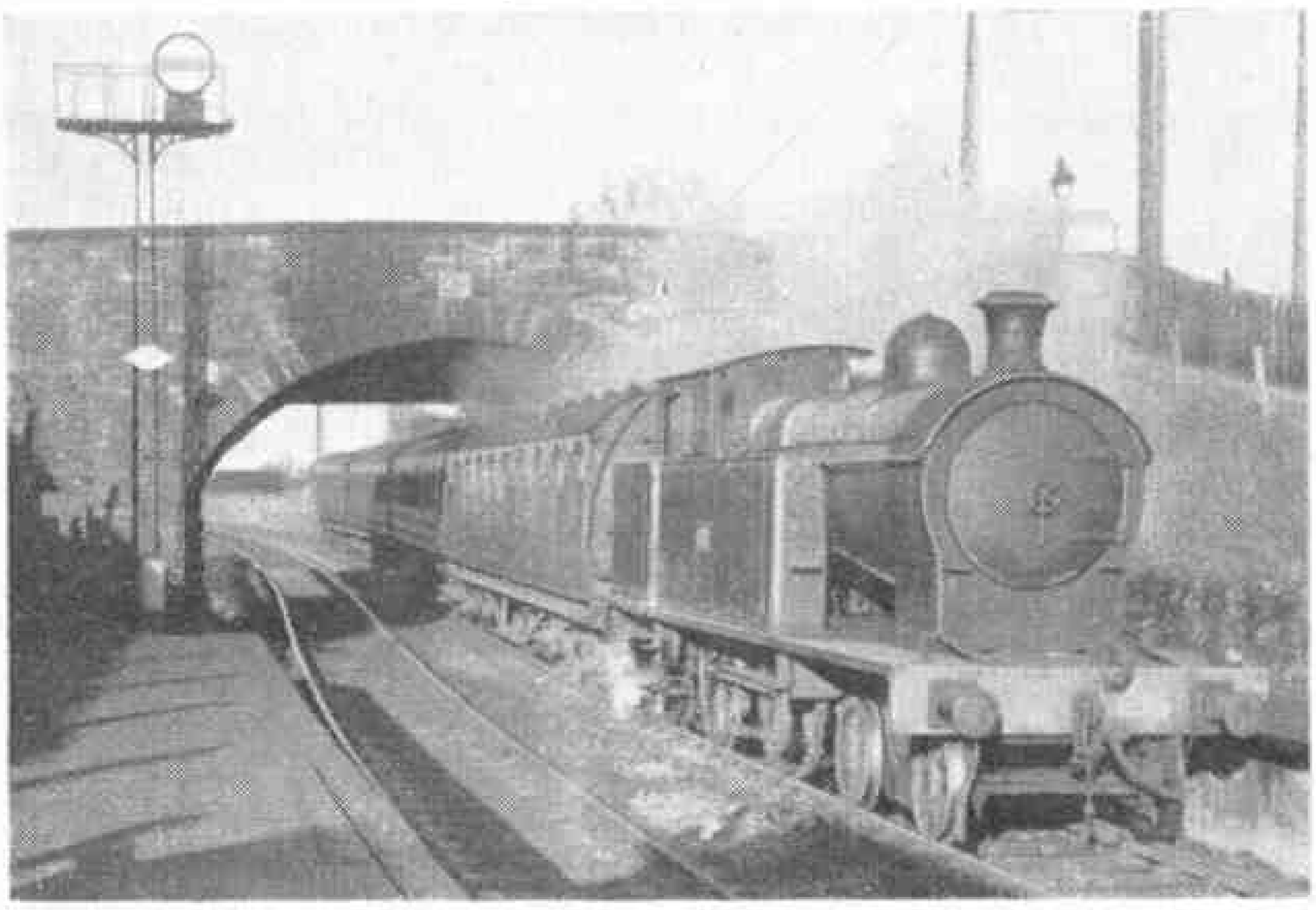
The Mobilgas Tanker, No. 514.

Another fine Dinky Toys racing car is announced in this issue. This is the H.W.M., the very successful racer developed by Hersham and Walton Motors. More about this next month.

Steam-Diesel Transition in Ulster

By E. M. Patterson

THOUGH the most notable feature of current railway development, the supplanting of steam by diesel traction, is probably deplored by some of us, the economic necessity for such a change cannot be escaped. A stretch of British line of extraordinary interest at the moment, since it is in this transition stage and may be said to epitomise present developments on a small scale, is the 12¾ miles between Belfast, the capital of Northern Ireland, and the seaside town of Bangor. In Northern Ireland heavy operating losses on the railways have forced the Ulster Transport Authority to adopt the diesel-engined passenger train.



A former "County Down" 4-4-2T, now No. 216 of the Ulster Transport Authority, running into Bangor West Halt with a train from Belfast consisting of ex L.M.S. (N.C.C.) stock.

Apart from 3½ miles between Newcastle and Castlewellan, now used solely by G.N.R.(I) trains, the Belfast-Bangor line is the only part of the former system of the Belfast and County Down Railway in use. The 1948 Transport Act brought into being the Ulster Transport Authority and into it was absorbed the 80 mile-long B.C.D.R. in an integrated rail and road system. Since much of this railway carried only a light traffic, it had ceased to be profit-making, and soon after the merger the main line to Newcastle and branches to Donaghadee, Ballynahinch and Ardglass were closed. I dealt with these events in an article on "The Last Days of the County Down," in the *M.M.* for May 1950.

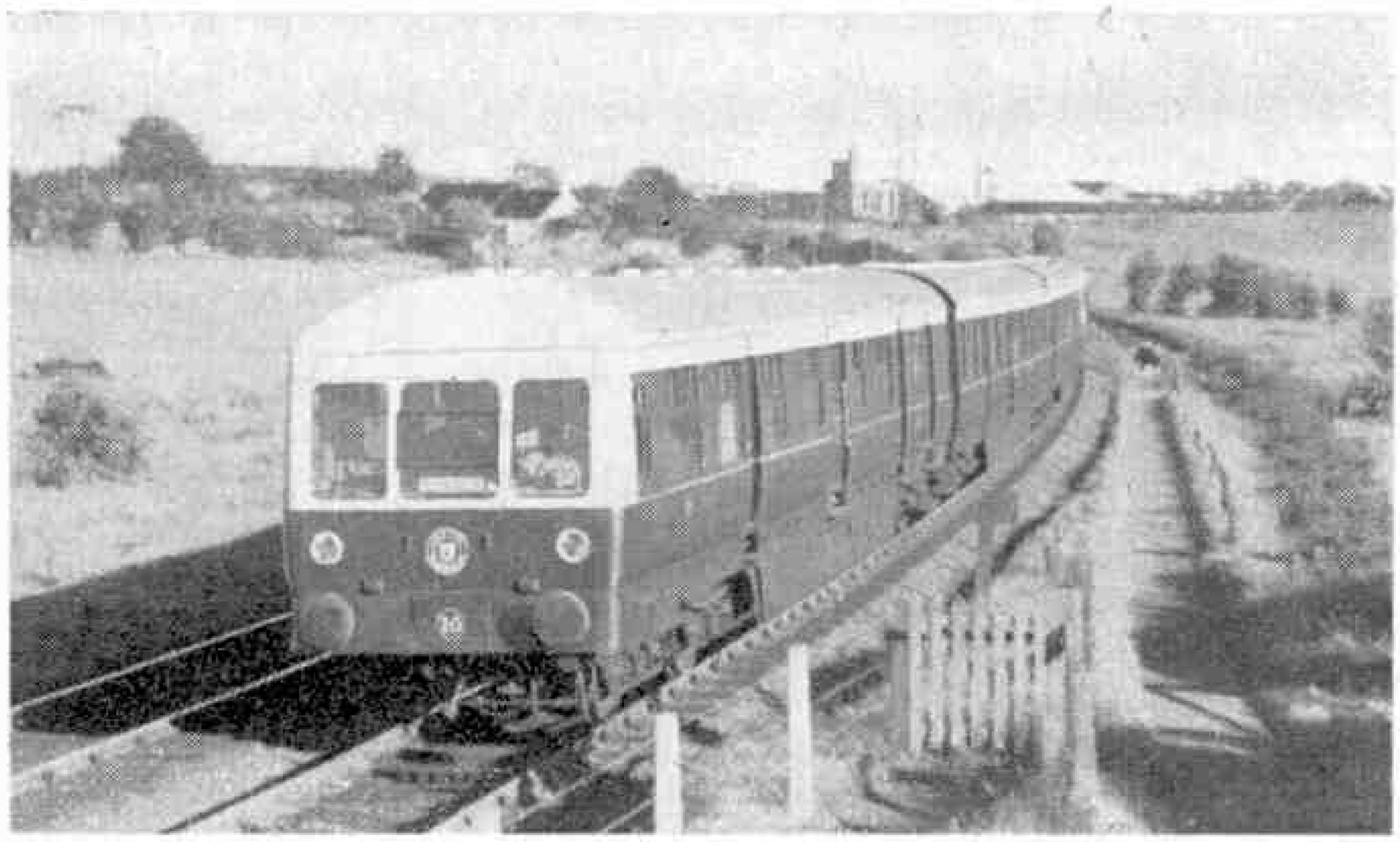
The branch to Bangor, serving a succession of "dormitory" towns on the south shore of Belfast Lough, was necessarily kept going because it carries a heavy passenger traffic of city workers. Goods traffic on it had been light for years and had virtually ceased past Holywood after 1949. Now, strictly speaking, the Bangor line is no longer a "branch" and indeed is one of the busiest stretches of the U.T.A.'s rail system.

Train workings to Bangor during the latter years of the B.C.D.R. depended entirely on steam locomotives, many of which were already old in 1948. So, with the main line closed, they are becoming redundant as diesel development proceeds and are not likely to operate much beyond the end of this year. Three types are still to be seen however, all of Beyer-Peacock manufacture. Most numerous are two classes of inside-cylinder 4–4–2 tanks, differing in cylinder sizes and boiler diameters. There are also four massive 4–6–4 tanks, formerly Nos. 22–25 and now renumbered Nos. 222–225 by the U.T.A. These are the only non-narrow gauge Baltic type tank engines in existence in these islands. They were built in 1920, and are beginning to suffer from advancing years. So they tend to keep to the engine shed more than formerly, but they are of exceptional interest and did much hard work in the war years with heavy passenger trains.

The combination of rail and road interests brought together the B.C.D.R. and the former L.M.S. (Northern Counties Committee) Railway, which served Counties Antrim and Londonderry. As a result some of the latter locomotives have been brought across the River Lagan to work Bangor line trains during peak times, and are shedded at Queen's Quay. These are the post-war 2–6–4 tanks, which resemble the Stanier and Fowler-designed

locomotives of the L.M.S., though of course they run on 5 ft. 3 in. gauge Irish track. At present two of these, No. 4 and No. 5, are at work, their high-pitched whistles contrasting with the deeper notes to which Co. Down people have been accustomed in the past.

Some ex-N.C.C. carriages have also been brought to the Bangor section, since much of the B.C.D.R. stock was of outmoded 6-wheelers. These transfers are not a simple matter, for the only connection between the two city termini is over the dock lines, with curves too sharp for long passenger vehicles or engines. Transfer has therefore to be made by the old N.C.C. main line to Antrim, returning to Belfast over Great Northern metals via Knockmore Junction and thence across the river by the line of the old Belfast Central Railway, a distance altogether of 50 miles for a movement of one mile "as the crow flies."



A three-car multiple-unit diesel train approaching Bangor West Halt from the Bangor direction.

Four light diesel railcar—trailer sets were used by the N.C.C. from 1935 and though of rather limited seating capacity these are light, fast and economical. One of them, No. 3, with No. 1 trailer, is now in use on the Bangor run on off-peak workings. It is readily recognised by the unsymmetrical appearance of the offset driver's cab perched at roof-level, and from a distance by its peculiarly toy-like hooter note.

To complete the galaxy of train types that run between Belfast and Bangor there are the new multi-engined diesel trains, destined ultimately to replace steam passenger trains over the whole rail system. Their design and development over the last three years illustrate the possibilities of liaison between road and rail. The engines are of the type used in the U.T.A. road bus fleet, thus simplifying maintenance, repairs and fuel supply. The building of frame and body and the power installation has been done at the U.T.A. Belfast workshops.

These new diesel-engined trains are made up of coupled "power cars" and "non-powered" or "intermediate" cars. The former have each two motors, slung below the frame and readily accessible for inspection from track level by removing valances. Each motor drives through a torque converter to one axle of each bogie, which has solid 3 ft. 2 in. wheels.

In the driving compartment of one of the Ulster Transport diesel trains.

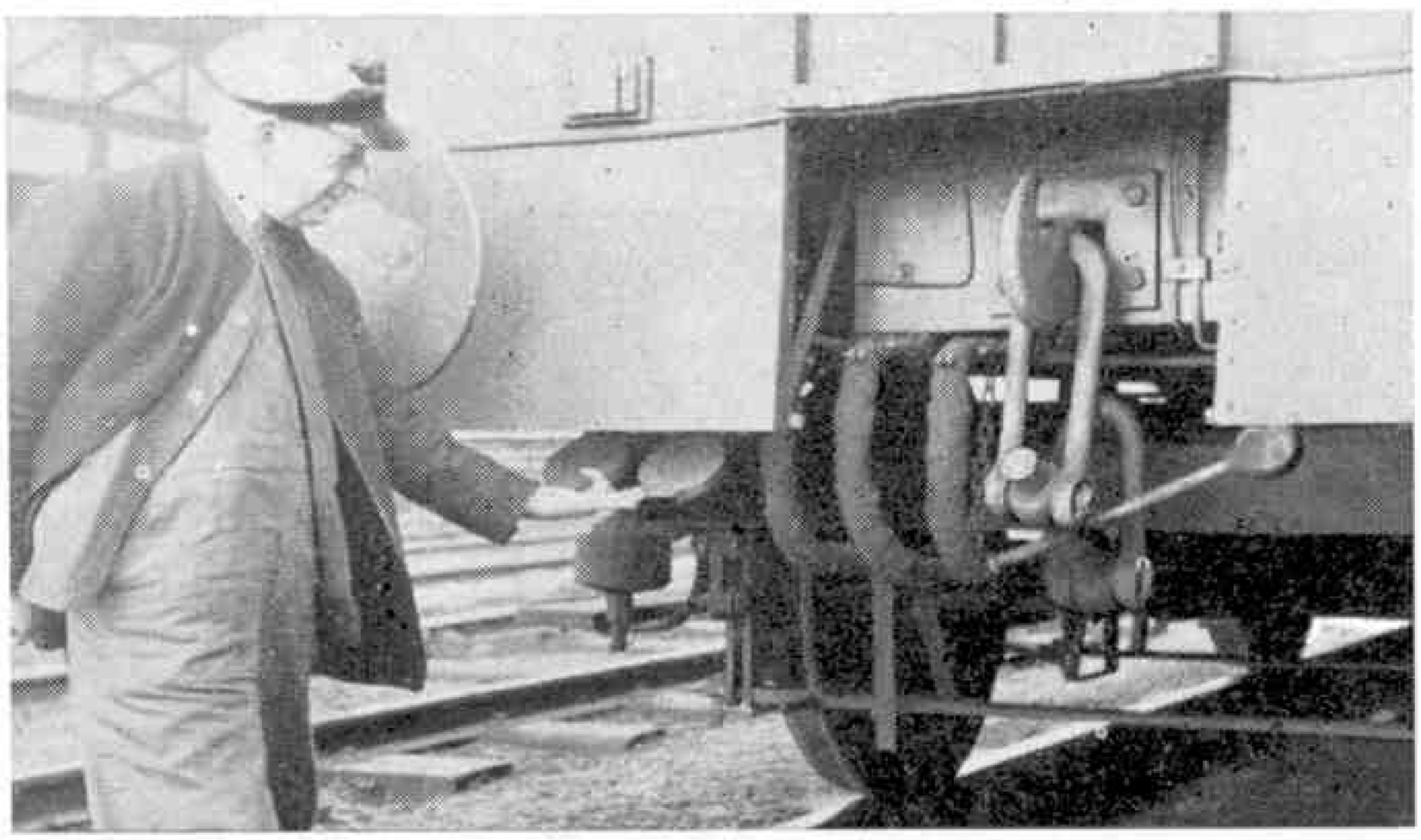
The power cars generally run along with an intermediate car, but considerable variation in the composition of a train is possible, provided always that power cars—which of course have the driving compartments—are at the ends of the set. Therefore "running round" at the termini is not necessary nor is it practicable, as the driving compartment is only at one end of the power car. Sets of three and six cars are mostly used, containing respectively two and four power cars. A six-car set has 48 first-class and 356 third-class seats, pulled by the 1,000 b.h.p. developed by the eight motors. The addition of two extra intermediate cars to such a set is practicable, and this would provide a total of 542 seats for passengers. Although control is possible from one driving compartment, platform lengths limit indefinite additions and on the track-circuited Bangor line it is apparently simpler to increase the frequency of the trains rather than their length.

Even among these new diesel trains there is variety. The first three-car set, including power cars Nos. 6 and 7, went into service in August 1951, had A.E.C. engines and vacuum brakes, and was of non-corridor type, as the intermediate car was adapted from a normal compartment carriage. Heating throughout this set was from a Vapor-Clarkson boiler, burning fuel oil and installed in the guard's compartment.

The five later three-car sets have power cars Nos. 8 and 9, 10 and 11, 24 and 25, 26 and 27, and 28 and 29 respectively. Interchange is possible should one car become unserviceable. The latest unit of the series, Nos. 28 and 29 with intermediate car No. 203, was on trial runs at the end of 1952. It had been fitted with slightly wider steps than the rest and disgraced itself when first entering Bangor terminus by removing the lamp and glasses from a ground signal. These later vehicles all have Leyland-Walker 9.8 litre, horizontal, direct-injection diesels, which put out 125/130 b.h.p. at 1,800 r.p.m. Concertina gangways join the power and intermediate cars in each three-car set, but the end position of the driving compartment in the set prevents complete corridor linkage in longer combinations where power cars are sited within the train. All have Westinghouse air brakes, on which is superimposed electro-pneumatic application to give simultaneous action throughout the train.

Heating in these later diesel trains is done in two ways. Power cars utilise radiated heat from the engine cooling water, each engine heating one side of the car. The non-powered intermediate cars have a separate hot-water gravity system, fed from a coke-fired boiler which is located in a small fireproof compartment.

Train timing has improved considerably on the Bangor line with the introduction of the multi-engined diesel trains. Stopping trains benefit from the rapid acceleration and braking at the many stations—there may be 10 stops on the journey—while the light weight helps on the gradients towards Craigavad, where a maximum of 1 in 72 occurs. Pre-war, the few expresses ran start to stop in 20 minutes. Another five minutes crept on to this with wartime restrictions and loads, but now 18 minutes is usual, while rumour hath it that on one occasion a diesel train reached Bangor in 14 minutes. The latter would be more factual were it not for the several 45 m.p.h. speed restrictions on curves.



This view shows the coupling, brake and electrical connections at the end of one of the multi-engined diesel trains of the Ulster Transport Authority. The driver is indicating the terminals of the electrical installation.

The writer is indebted to U.T.A. officials for their ready assistance in providing information, and for facilitating inspection and photography.

Tankers and Barges

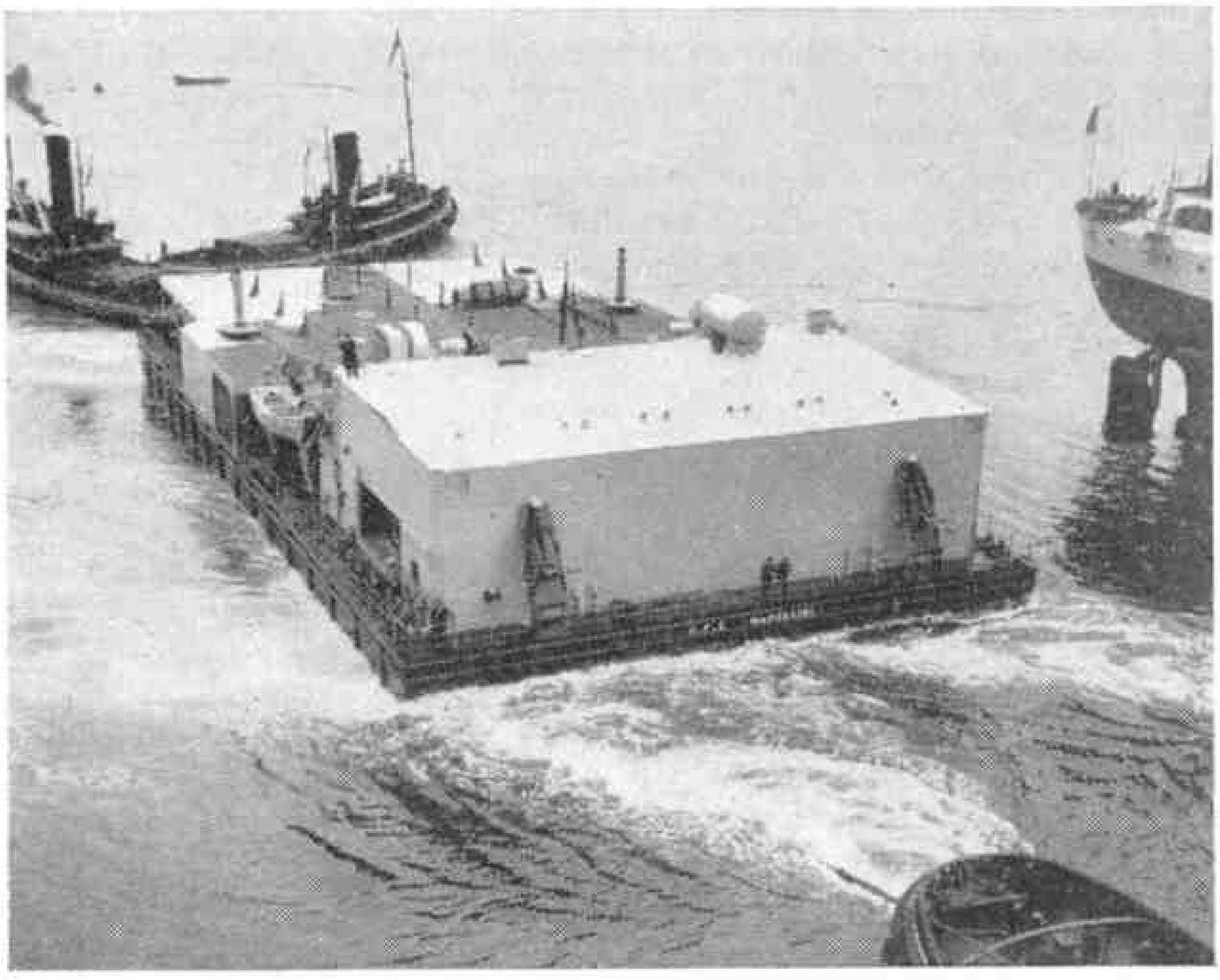
ONE of the strangest oil fields in the world is that on Lake Maracaibo, in Venezuela. The lake is really a large inland sea, about the size of Wales. It ranks fifteenth among the world's great lakes, and is larger than Lake Ontario and almost as large as Lake Erie.

It is interesting to learn that the name Venezuela, which means little Venice, was first used for the country in which Lake Maracaibo is placed by Columbus because there was an Indian village built on piles off its shores. Today, instead of a few dwellings, a forest of oil derricks rises from its surface, for far below it there is a rich store of oil. The derricks have been erected on drilling platforms that stand on tall concrete caissons, sometimes 150 ft. in length, that have been hammered down into its bed. Some of these stand in 100 ft. of water.

Drilling for oil in these unusual conditions calls for special equipment, and barges designed for the purpose are used to house the necessary power units and to carry stores. The illustration on this page shows the first diesel-electric drilling barge to be built in Great Britain after its launch at the yard of Messrs. Ferguson Brothers, Port Glasgow. It was designated G.P.2, the initials indicating Gabarra de Perforacion, which is the Spanish term for a drilling barge. An unusual feature of the barge was that it was launched with practically all its machinery on board.

The drilling barges used on Lake Maracaibo carry sufficient equipment and stores to allow them to stay out for more than a month at a time. G.P.2 itself is 158 ft. long and 80 ft. in breadth, and its draft, with practically all main machinery on board, is only 7 ft. 6 in. It is used in conjunction with a permanent drilling platform erected at the well site, and drilling can be carried out to depths of 15,000 ft. or nearly three miles.

Oil certainly dominates the shipbuilding world at the moment. New tankers are coming into operation, but still more than half the new shipping construction throughout the world is devoted to this class of vessel. One reason for this is the building for the Royal Dutch Shell Group of oil companies of 50 standard general purpose oil tankers, of 18,000 tons deadweight, in yards in Great Britain, Holland and Denmark. The engines of 46 of the vessels will be driven by steam turbines, capable of developing 8,300 shaft horse power, and the remaining four will have turbo-electric machinery. A novel feature of all the vessels will be the electric overside lift, a new device that will transport six persons or ten hundredweight of stores at a time.



Launching the drilling barge G.P.2, the first of her kind to be built and equipped in Great Britain, at the yard of Messrs. Ferguson Bros., Port Glasgow. Shell photograph.

A particularly interesting tanker that is to be constructed by Cammell Laird and Company Limited of Birkenhead for the Anglo-Saxon Petroleum Company Limited, the operators of the Shell Tanker Fleet, is one of 18,000 tons deadweight that is to be driven exclusively by gas turbines. This will be the first of its kind in the world, and its construction follows the successful experiment with the *Auris*, described in the *M.M.* for April 1952.

Among the Model-Builders

By "Spanner"

Internal Expanding Brake

A. Browning, Bristol, provides details of a powerful internal expanding type of brake he has designed. His mechanism is shown in Fig. 1 and it follows fairly closely the constructional methods used in actual practice.

The back plate is a Face Plate and each shoe 1 is made from a $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip, which is carefully bent to the same radius as the internal diameter of the brake drum, which is a Boiler End 2.

An Angle Bracket is bolted tightly to one of the lugs of each Double Angle Strip, and the shoes are pivoted on the back plate by a bolt 3 passed through the Angle Brackets and fitted with lock-nuts. The cam that operates the shoes is formed by a Collar 4 fixed on a Pivot Bolt. The Pivot Bolt is passed first through the bore of a Collar, which is fixed on it by a $\frac{1}{2}''$ Bolt. Then the shank of the Pivot Bolt is passed through the Face Plate and into the tapped hole of the Collar 4, and the grub screw is tightened against the Pivot Bolt.

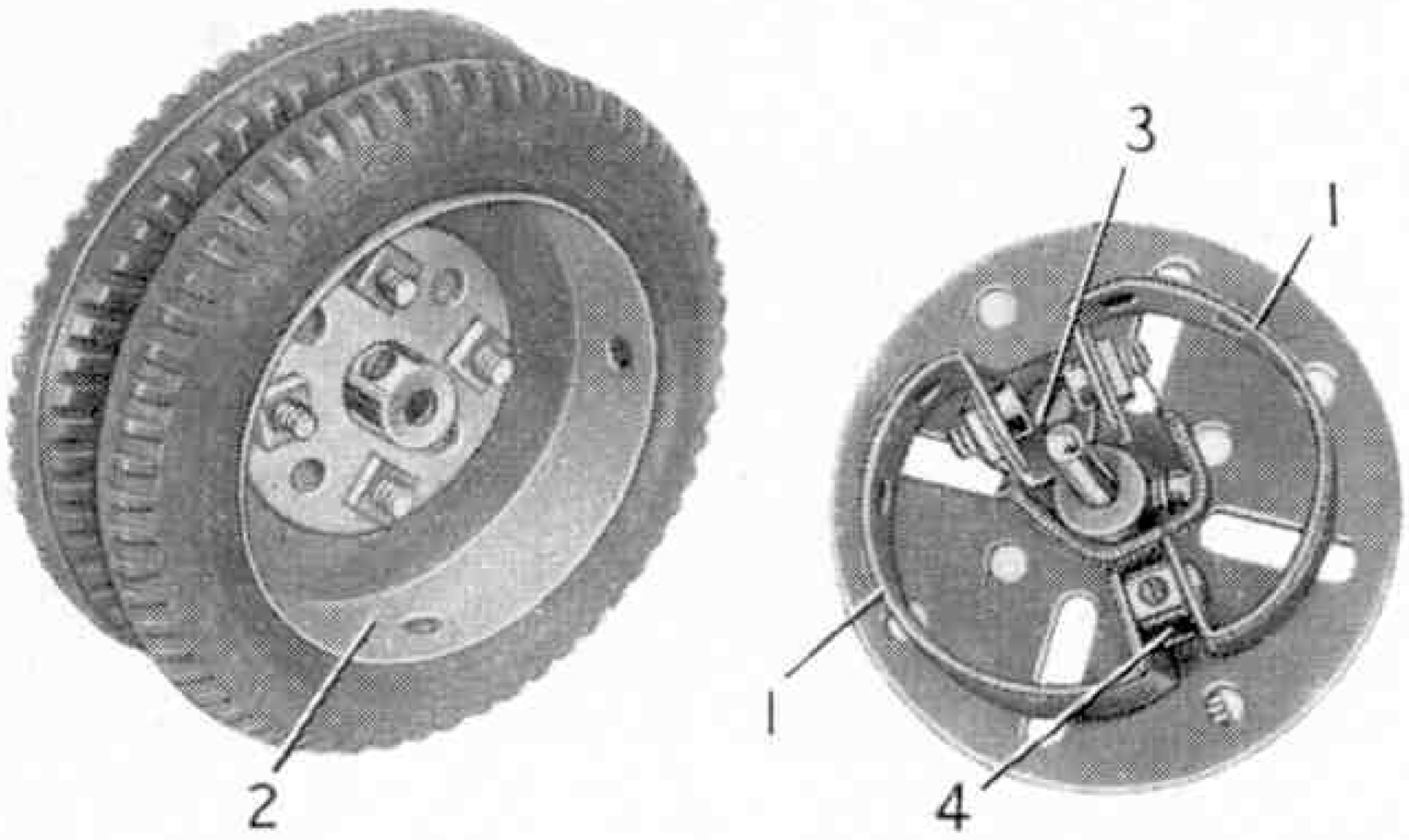


Fig. 1. An exploded view of the internal expanding brake described on this page.

A Meccano Amusement Machine

Recently, Mr. A. E. Robinson, Vancouver, B.C., sent me details of an interesting Meccano model that he has based on one of the popular *Test Your Driving Skill* amusement machines. It is shown in Figs. 2 and 3 and consists essentially of a steering wheel connected to a movable pen that rests against a roll of paper, which is drawn slowly through the machine by a Clockwork Motor. A winding roadway is first sketched on the paper, and the game consists of trying to make the pen trace a central path along the road by controlling its movements through the steering wheel. A lot of fun can be had among a group of friends by arranging for each of them in turn to test his skill by "driving" over the same section of road. Points are debited against the driver each time the line traced by the pen crosses the border of the road, the winner being the competitor who finishes the course with the lowest score.

A Meccano model of the coveted F.A. Challenge Cup, which is presented to the winning team in the annual Cup Final match at Wembley Stadium. The model is the work of Richard M. Thorpe, Whittingham, Preston.

The mechanism is housed in a simple framework, as shown in the illustrations. The roll of paper 1 is clamped between two wheels on a Rod, and a Pawl and Ratchet 2 ensures that the Rod can rotate in one direction only. The paper passes over a flat "easel" made from plywood or stout cardboard fixed to a framework 3. It is guided on to a take-up roller by means of 1" Pulleys 4. The roller is made from a Cylinder and two $1\frac{1}{8}''$ Flanged Wheels, and it is fixed on a Rod

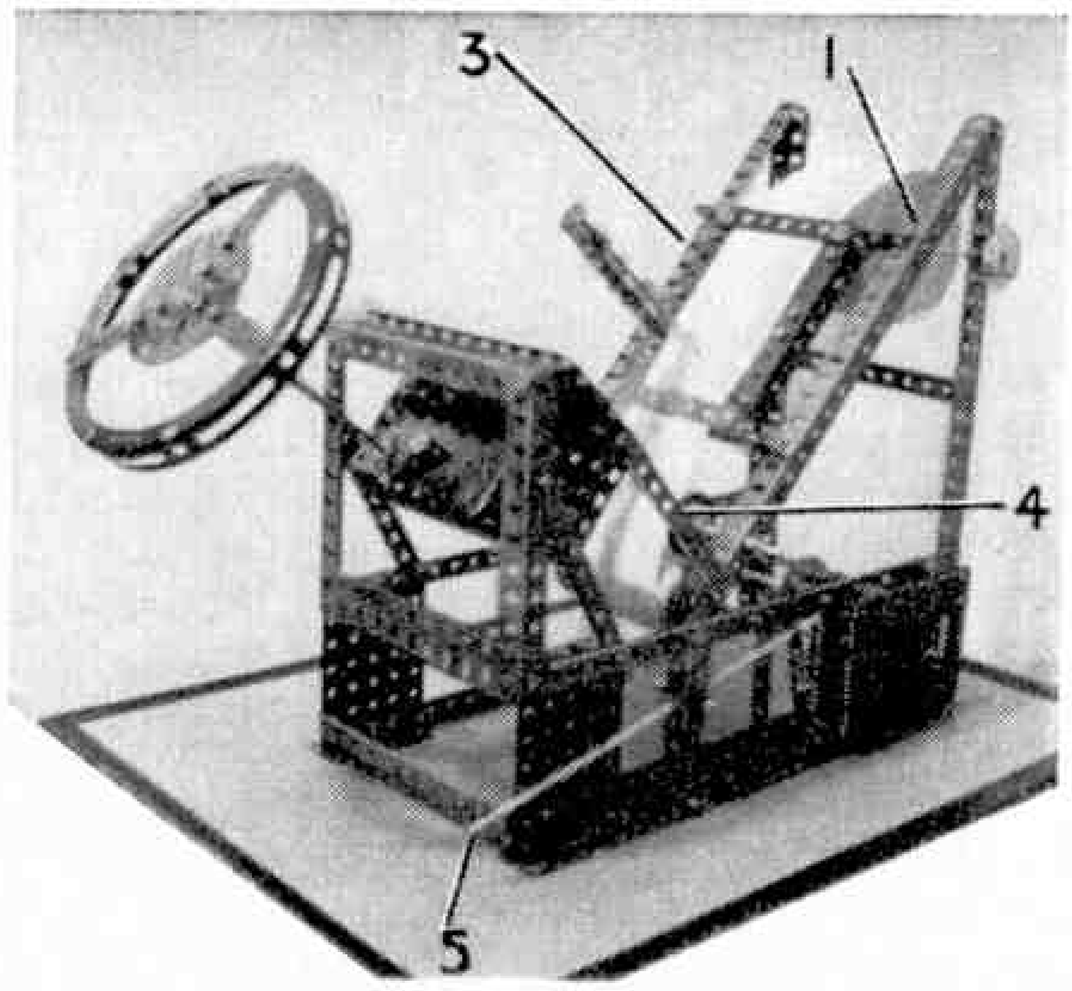


Fig. 2. A novel Driving Test Amusement Machine.

that is driven through 9 : 1 ratio reduction gearing from the Clockwork Motor. The 9:1 ratio is provided by three ½" Pinions and three 57-tooth Gears.

The steering column is fitted with a ½" Pinion that drives a second ½" Pinion in constant mesh with a 57-tooth Gear. A Crank on the same Rod as the Gear is extended by a 3½" Strip that supports the pen holder. A ball-pen refill is used for the pen.

The Motor brake lever is extended by a Rod 5.

A Simple Reversing Mechanism for Outfit No. 7

One of the model-building queries brought to my notice recently came from a reader who was building a pit-head gear from his No. 7 Outfit. The model was driven by an E020 Electric Motor, and its builder had been unable to devise from the parts in his Outfit a suitable reversing mechanism to control the up and down movement of the pit cage. I was able to suggest the simple arrangement shown in Fig. 4, and I understand that it proved entirely satisfactory for the purpose.

A Worm 1 is fixed on a shaft driven by the Motor, and is in constant mesh with a ½" Pinion 2. The Pinion is free to turn on a ¾" Bolt that is fixed to the side of the housing by two nuts, and is spaced from the inner nut by a Washer.

The output shaft is able to slide about ¼" in its bearings, and its movement is effected by a 2½" Strip 3 lock-nutted to an Angle Bracket bolted to the base. A Bolt held by two Nuts in the Strip engages between Collars on the output shaft, which is fitted also with a ½" Pinion 4

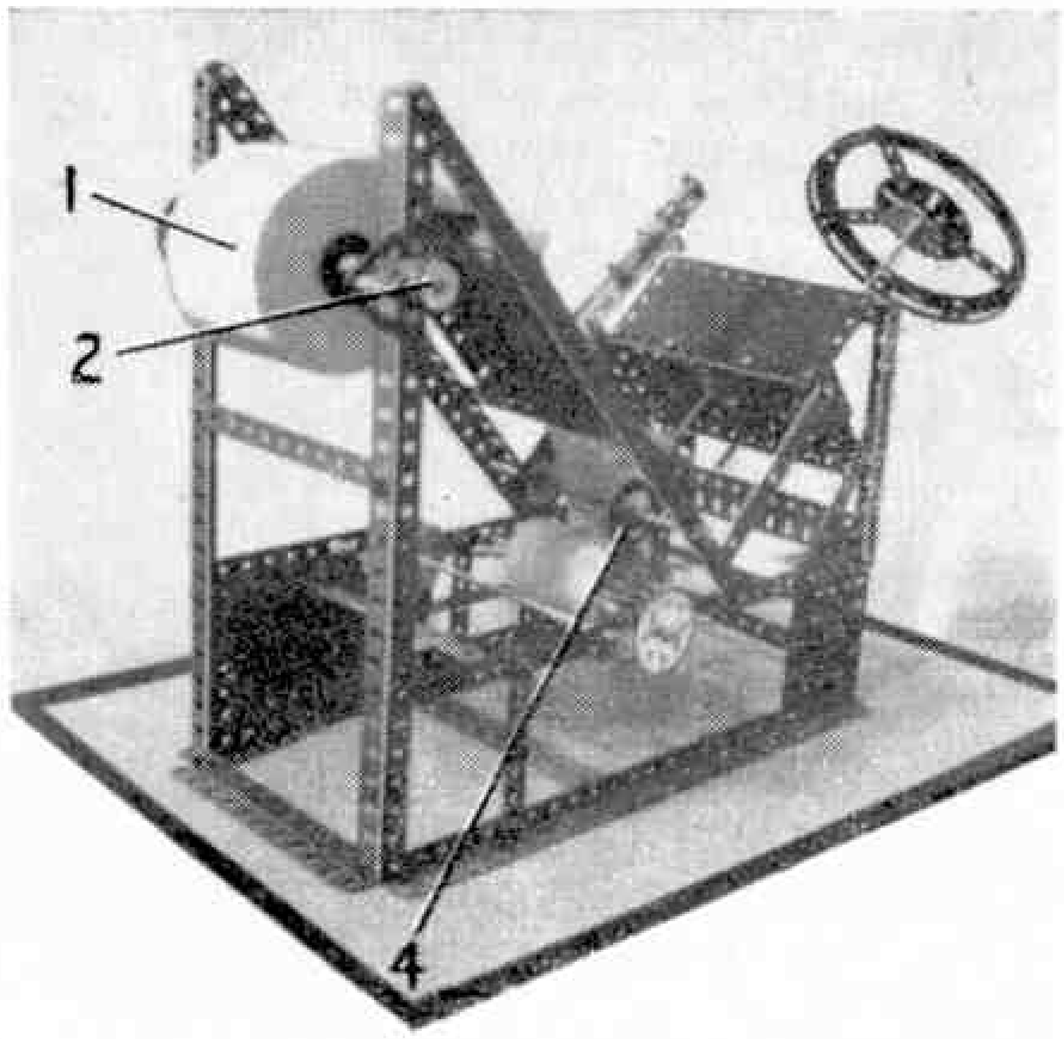


Fig. 3. A rear view of the Driving Test Machine showing arrangement of the paper drive.

and a 57-tooth Gear 5. Forward motion is obtained by sliding Gear 5 into mesh with the Worm, and reverse drive is provided by engaging Pinion 4 with Pinion 2.

It will be noted that there is a difference in the ratio between forward and reverse drives, and in models such as pit-heads or cranes, the lower speed drive should be arranged so that it is used for raising the cage or load.

Model-builders who do not possess a large assortment of parts, especially gears, will find this mechanism most useful, as it is one that can be adapted for use in a wide range of interesting models and is easy to assemble.

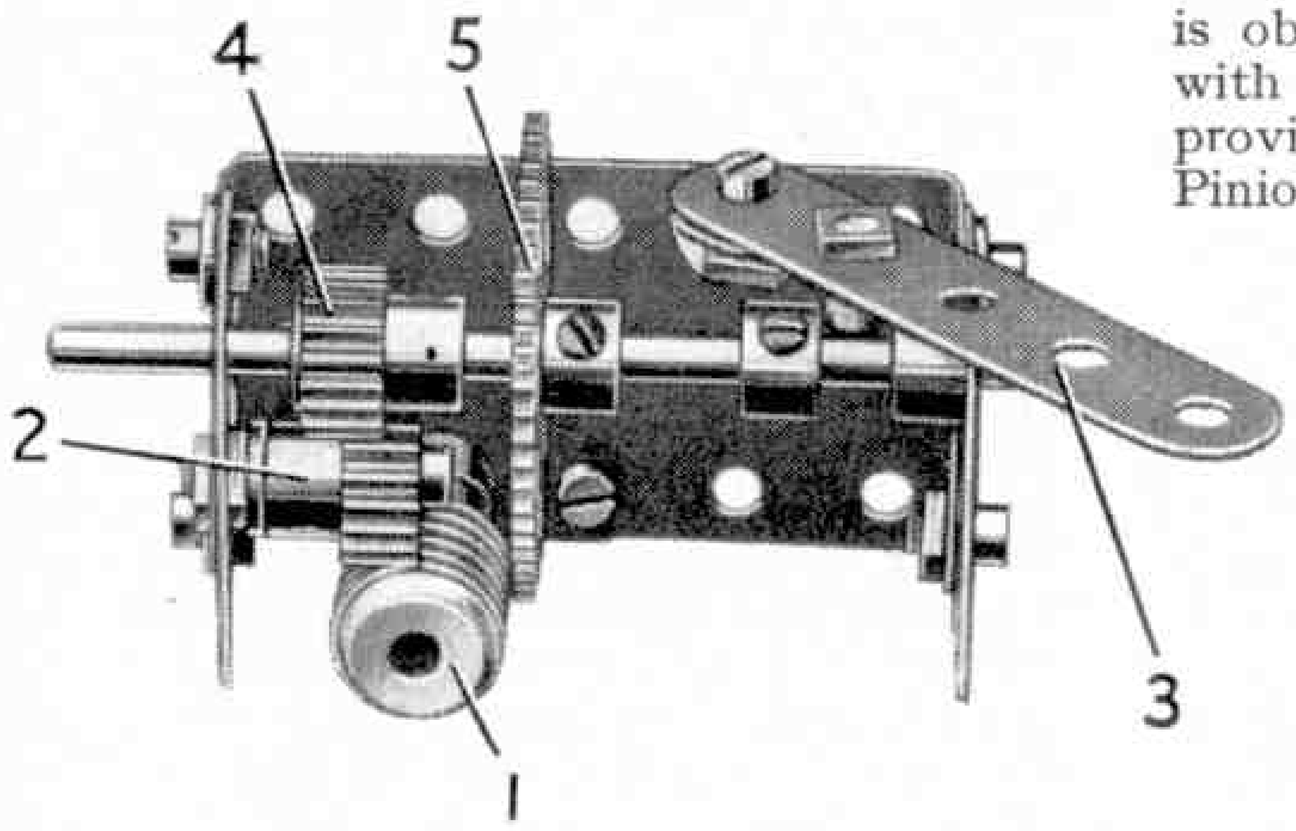


Fig. 4. A simple reversing mechanism that can be built from parts in a Meccano Outfit No. 7.

Special Meccano Model

Tunnel Excavator

THIS new model, which is specially designed for experienced model-builders with a good collection of parts at their disposal, is based on an actual tunnelling machine manufactured by the Distington Engineering Co. Ltd., Workington. It is known as the Distington-Goodman Tunneller, and is specially designed and constructed for working in small bore tunnels. The model is fitted with an E20R type Electric Motor and is shown complete in Fig. 1.

Each side of the chassis consists of two 12½" Angle Girders joined by Fishplates to form channel section girders, and the sides are connected at each end by two 3½" Angle Girders. The wheels are 1⅛" Flanged Wheels fixed on 4½" Rods mounted in the slotted holes of the lower pair of 12½" Angle Girders, as shown in Fig. 2, the Rods being held in position by Collars fixed inside the Angle Girders. The Collars are fitted with 7/64" Grub Screws, and the standard Grub Screws must be removed as otherwise their projecting heads will foul the flanges of the Girders. A 57-tooth Gear 1 is fixed on the rear axle.

Collars 2, fitted with Threaded Pins, are placed over the protruding ends of each axle, and a Compression Spring is slipped over each Threaded Pin as shown in Fig. 3. The upper ends of the Threaded Pins are free to slide in Angle Brackets bolted to 9½" Angle Girders fixed to the chassis, and the locking nuts are tightened against the Collars so that the Threaded Pins do not grip the axles. Each Collar is spaced from the chassis by two Washers.

Each side of the model is made by bolting a 1½" Strip 3 and 1½" Angle Girder 4 to the 9½" Angle Girder fixed to the chassis. The upper ends of parts 3 and 4 are connected by a further 9½" Angle Girder 5, and the space between them is filled by 5½" × 1½" Flexible Plates. The side is extended by a 5½" Angle Girder 6 bolted to Girder 5, which supports a 5½" × 1½" Flexible Plate and a 2½" × 2½" Flat Plate 7. These Plates are edged by Strips as shown in Fig. 1, and 3½" Angle Girders 8 are bolted to the upper corners of Plates 7.

The model is driven by an E20R Electric Motor bolted direct to the rear of the chassis. The ½" Pinion on the Motor shaft engages a 57-tooth Gear 9, fixed on a 3½" Rod 10 (Fig. 3). The bearings for Rod 10 are provided by a 3½" × ½" Double Angle Strip 11 bolted across the chassis, and by a 2½" × ½" Double Angle Strip 12. Double Angle Strip 12 is bolted to a flange of the Motor side-plate, and to

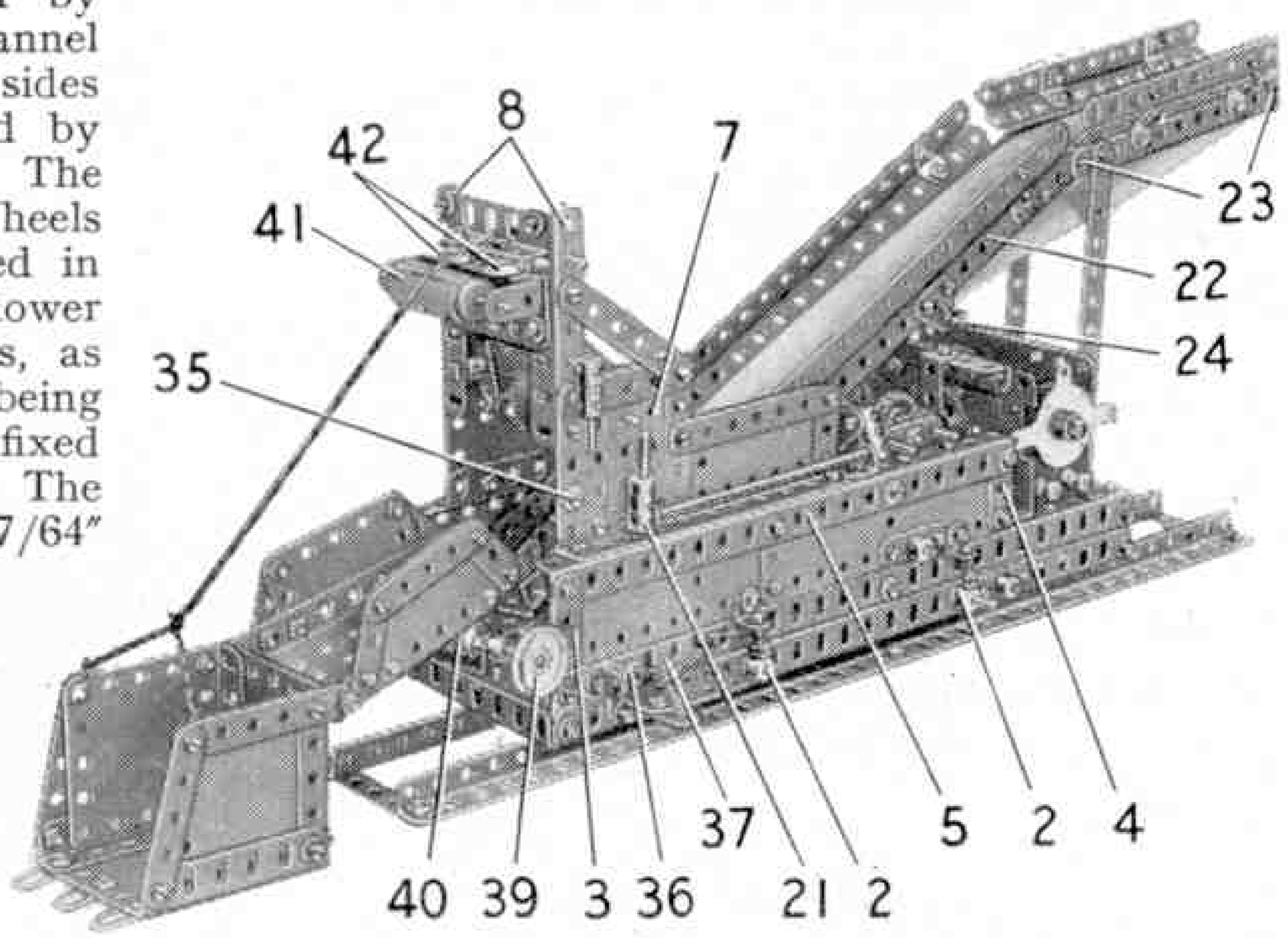


Fig. 1. A general view of the Tunnel Excavator, with the bucket lowered ready for loading.

a 1½" Angle Girder fixed to the side-plate.

Rod 10 is fitted with a Worm 13 that is in constant mesh with a ½" Pinion on a 3½" Rod 14. This Rod is free to turn in 1½" Angle Girders bolted to Girders 5, and it carries a 1" Gear 15 and a ½" Pinion 16. An intermediate Pinion 17 is free to turn on a ¾" Bolt fixed to one of the 1½" Girders by two nuts, and this Pinion is in constant mesh with a further ½" Pinion on a Rod 18. The latter Rod carries also a ¾" Sprocket and a 1" Gear, and the Sprocket is connected by Chain to a similar Sprocket on a Rod 19. Rod 19 is located in the slotted holes of the chassis by 1½" Strips, and a ½" Pinion on the Rod engages the 57-tooth Gear 1 on the rear axle.

The drive in forward and reverse directions is engaged by sliding Rod 14 to

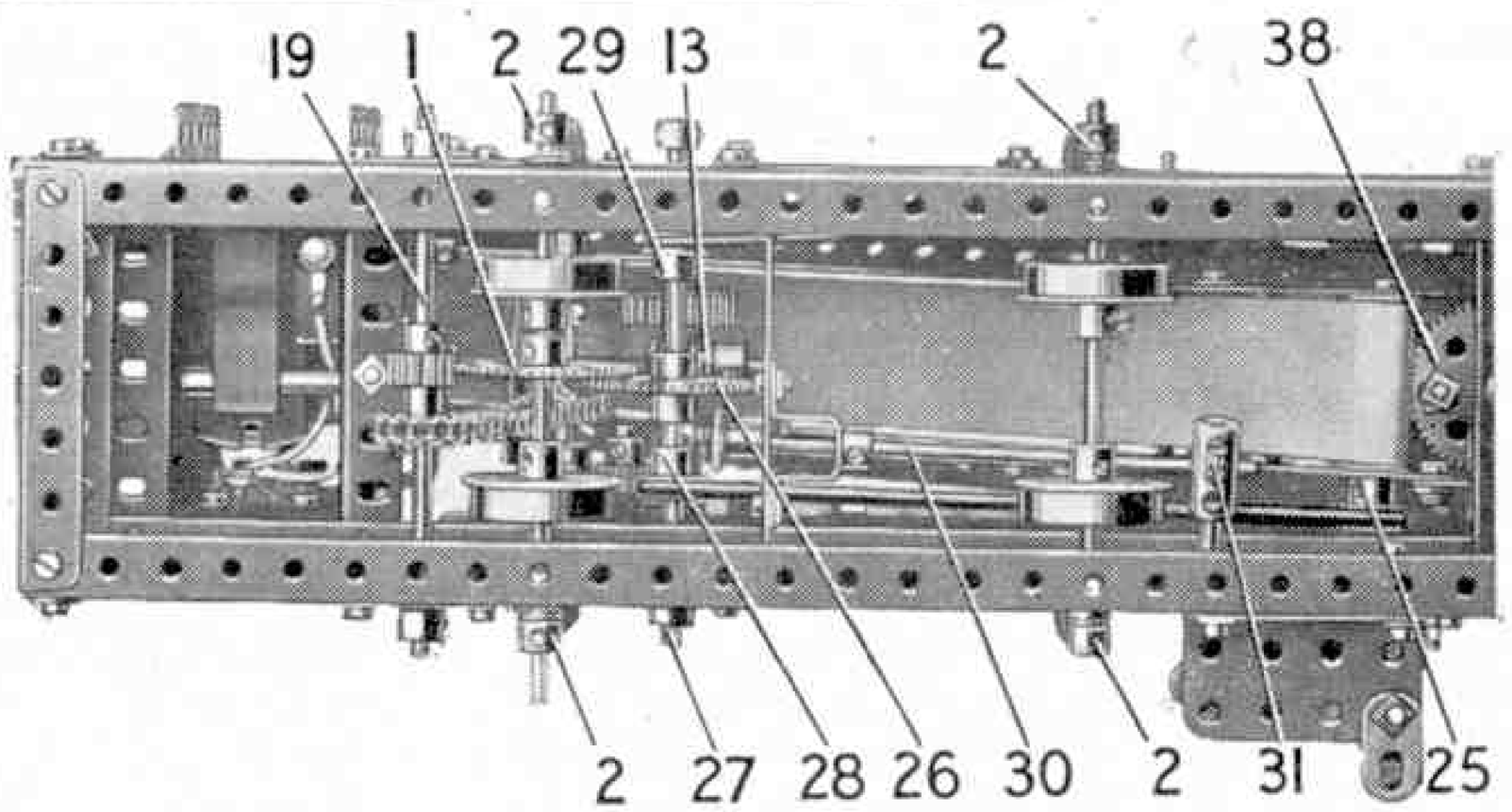


Fig. 2. This underneath view shows the drive to the conveyor belt and the bucket-operating hoist.

bring the appropriate gears into mesh. The sliding movement of the Rod is controlled by a ¾″ Bolt fixed by two nuts to a Double Arm Crank 20. The Double Arm Crank is free to pivot on a ½″ Bolt lock-nutted to Double Angle Strip 11, and a 1½″ Strip slipped over the ¾″ Bolt is pivoted on a Bolt locked in a Coupling. The Coupling is fixed on a 5″ Rod mounted in Angle Brackets, and the operating lever is a Coupling 21 fitted with a 1″ Rod (Fig. 1).

The main section of the conveyor consists of 12½″ Strips 22, connected by two 1½″ × ½″ Double Angle Strips. Two further 12½″ Strips on each side are joined together by Obtuse Angle Brackets and are also connected to the Strips 22 by Obtuse Angle Brackets. The short horizontal section of the conveyor is assembled in the same way as the main section, using 5½″ Strips in place of 12½″ Strips, and the sections are joined by 2½″ Curved Strips as shown in Fig. 1.

The conveyor belt is supported by four rollers. Two of these are indicated at 23, and consist of 2″ Rods fitted with Collars and a Coupling. The third roller, which is marked 24, is a 2½″ Rod and it is mounted in 1″ Triangular Plates and held in position by Spring Clips. The fourth roller is used to drive the belt, and it is a 2½″ Rod mounted in the next-to-end lower holes in the Strips 22. Two Collars and a Coupling are fixed on the Rod, and a ½″ Pulley 25 is also locked in position. A short length of adhesive tape is wrapped round the roller to increase the friction between it and the belt. The belt is made by placing a strip of stout paper round the rollers and then glueing the ends together. The complete unit is attached to the front of the chassis by a Corner Angle Bracket and it is supported at the rear by two 5½″ Strips bolted to 1″ × ½″ Angle Brackets.

The drive to the conveyor is engaged by sliding a 57-tooth Gear 26 into mesh with the Worm 13. Gear 26 is carried on a 4½″ Rod 27 mounted across the chassis, and the Rod is fitted with ½″ Pulleys 28 and 29. Pulley 28 is linked by twin Driving Bands to the Pulley 25. The sliding movement of Rod 27 is controlled by a Double Arm Crank fixed on a Rod 30. The Rod is mounted in a 3½″ × ½″ Double Angle Strip bolted across the chassis, and in a Double Bent Strip fixed to the Double Angle Strip. A Bolt in the Double Arm Crank engages between Pulley 28 and a Collar, and a Coupling 31 on Rod 30 is fitted with a 1½″ Rod that projects through a slotted hole in the chassis. The 1½″ Rod carries a Rod and Strip Connector

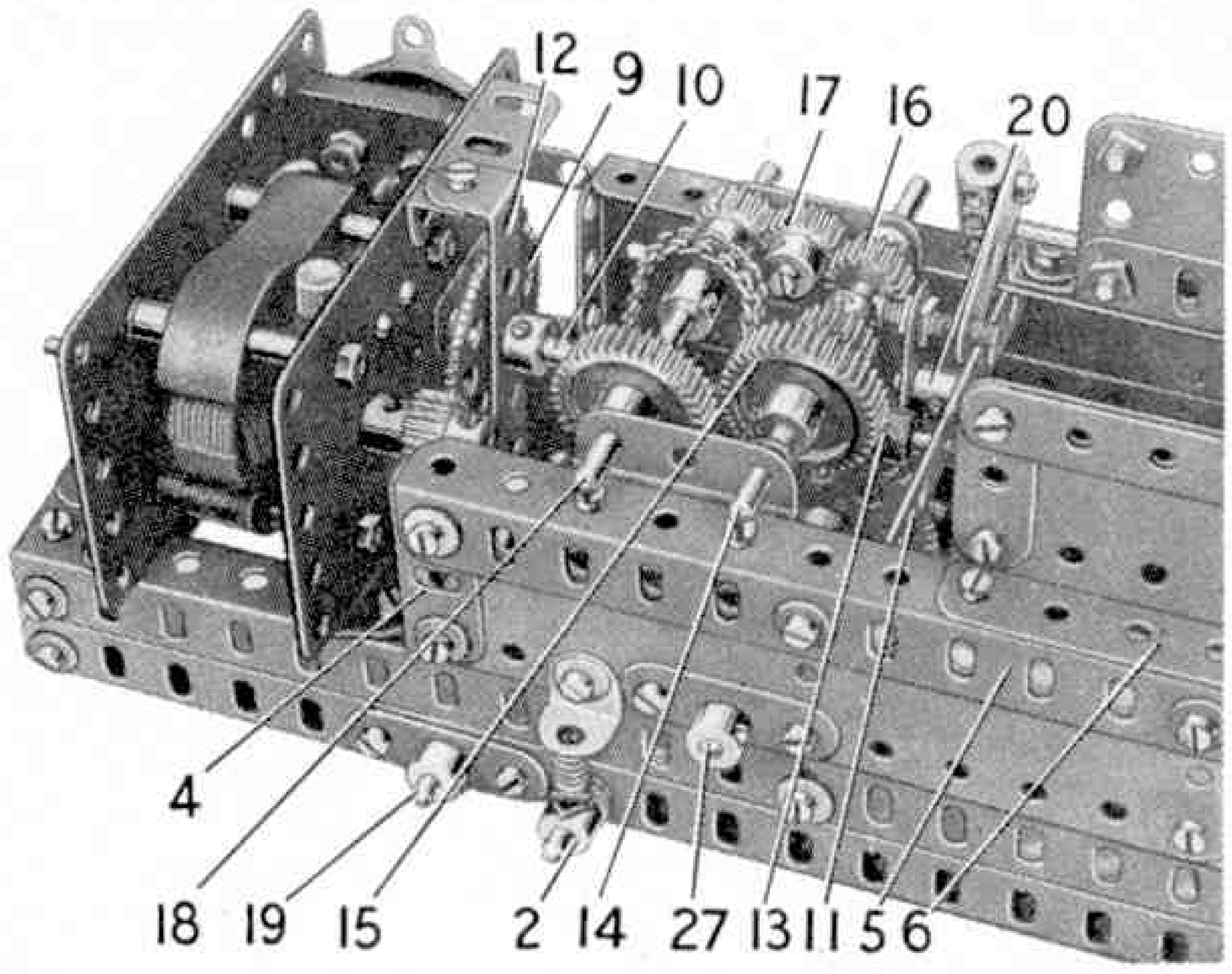


Fig. 3. The tunnelling machine with the conveyor removed to show the Electric Motor and the main drive reversing mechanism.

that represents a foot-operated pedal.

The drive to the drum operating the digger bucket is taken by a Driving Band from Pulley 29 to a 1″ Pulley 32 (Fig. 4) on a 3½″ Rod mounted in the Flat Plates 7. A ¾″ Pinion is also fixed on this Rod, and the drive to the drum shaft is engaged by sliding a 50-tooth Gear into mesh with this Pinion. The Gear is fixed on the drum shaft, which carries also a 1½″ Pulley 33 and two ¾″ Flanged Wheels that form the drum. The lever controlling the winding movement is a 1″ Rod held in a Coupling on a Rod 34. This Rod is connected by a Rod and Strip Connector to a Double Arm Crank that is free to pivot on a Bolt lock-nutted to one of the Girders 8. A Bolt in the Double Arm Crank engages between the 50-tooth Gear and a Collar.

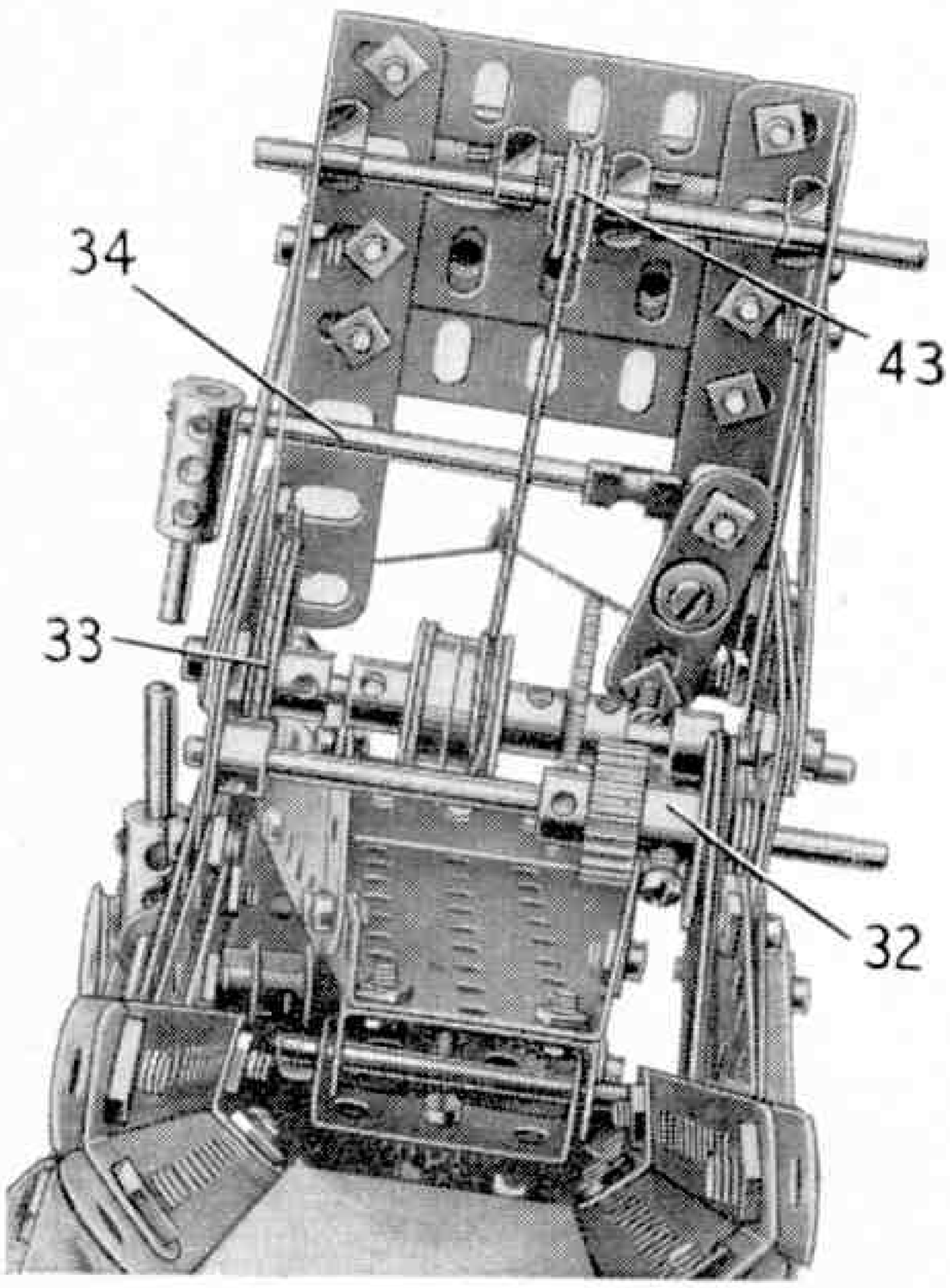


Fig. 4. A detail view of the drum that operates the bucket hoist and the gear drive to the hoisting shaft.

A brake on the drum shaft is provided by a length of Cord fastened to one of the Flat Plates 7 by a bolt 35, then taken through a hole in the Plate and passed round the Pulley 33. The Cord is tied at its lower end to a Spring Clip on a 1½″ Rod fixed in a Collar 36. The Collar is pivoted by a bolt to an Angle Bracket bolted to the chassis, and a Rod and Strip Connector 37 fitted to the Rod carries a Threaded Pin. A Compression Spring is slipped over the Threaded Pin, and it bears against a Fishplate bolted to a Girder Bracket that represents the operator's footplate. The Compression Spring keeps the Cord taut round the Pulley 33 unless the pedal is depressed.

The sides of the digger bucket are 2½″ × 2½″ Flexible Plates, and its bottom and back are formed by similar parts. The Flexible Plates are connected together by 2½″ and 3″ Angle Girders as shown, and they are edged by 2½″ and 3″ Strips. The bucket is lock-nutted by ⅜″ Bolts to the wider end of a Flanged Sector Plate fitted with sides formed by 2½″ × 1½″ Flexible Plates strengthened by Strips, as shown in Fig. 1. A 1½″ × ½″ Double Angle Strip is bolted to the narrow end of the Flanged Sector Plate, and a 2″ Rod is passed through the lugs of this Double Angle Strip and a similar part bolted tightly to a 57-tooth Gear 38 (Fig. 2). The 2″ Rod is held in place by Spring Clips.

A 2″ Rod is fixed in the boss of Gear 38, then passed through the 3½″ Angle Girders of the chassis and retained in position by a Collar. The bucket can be slewed from side to side by turning a hand-wheel 39. This is fixed on a 2½″ Rod that carries a Worm 40. The Rod is mounted in a 1½″ × ½″ Double Angle Strip bolted at a slight angle to a Semi-Circular Plate fixed to the front of the chassis. The Worm engages the 57-tooth Gear 38.

A length of Cord is tied to the bucket, and passes over a roller 41 and between two ½″ loose Pulleys 42. It then passes over a ½″ loose Pulley 43 and is tied to the winding drum. The roller 41 consists of a Sleeve Piece and two Chimney Adaptors, and it is free on a Rod held by Spring Clips in a 2½″ × 1″ Double Angle Strip bolted to the Girders 8. The Pulleys 42 are loosely held on ½″ Bolts passed through 2½″ Angle Girders fixed to the Girders 8. Pulley 43 is free to turn on a Rod mounted as shown in Fig. 4.

Parts required to build the model Tunnel Excavator: 6 of No. 1; 8 of No. 2; 2 of No. 3; 4 of No. 4; 7 of No. 5; 15 of No. 6a; 4 of No. 8; 4 of No. 8a; 2 of No. 9; 6 of No. 9b; 2 of No. 9c; 4 of No. 9d; 5 of No. 9f; 8 of No. 10; 7 of No. 12; 2 of No. 12b; 16 of No. 12c; 2 of No. 15; 4 of No. 15a; 6 of No. 16; 2 of No. 16a; 2 of No. 16b; 5 of No. 17; 2 of No. 18a; 2 of No. 18b; 4 of No. 20; 2 of No. 20b; 1 of No. 21; 2 of No. 22; 3 of No. 23; 3 of No. 23a; 1 of No. 25; 5 of No. 26; 1 of No. 27; 4 of No. 27a; 2 of No. 31; 2 of No. 32; 13 of No. 35; 166 of No. 37; 20 of No. 37a; 65 of No. 38; 4 of No. 38d; 1 of No. 40; 1 of No. 45; 1 of No. 46; 6 of No. 48; 1 of No. 48a; 2 of No. 48b; 1 of No. 54; 26 of No. 59; 3 of No. 62b; 7 of No. 63; 2 of No. 72; 2 of No. 77; 2 of No. 90; 1 of No. 94; 2 of No. 96a; 1 of No. 103f; 4 of No. 111; 5 of No. 111a; 5 of No. 111c; 5 of No. 115; 5 of No. 120b; 1 of No. 154a; 1 of No. 161; 1 of No. 163; 2 of No. 164; 3 of No. 186b; 2 of No. 188; 6 of No. 189; 4 of No. 190 3 of No. 212; 1 of No. 214; 1 E20R Electric Motor.

A New Model for Outfit No. 4

Hammerhead Crane

THE simple but effective hammerhead crane shown in Figs. 1 and 2 includes mechanisms for traversing the carriage to and fro along the boom and for raising and lowering the load. All the parts required to build this model are included in a No. 4 Outfit.

The top of the supporting tower is a 5½" × 2½" Flanged Plate 1, and each leg is a 5½" Strip bolted to the Flanged Plate and braced at the top by a 2½" stepped Curved Strip. The lower ends of the legs on each side are connected by 5½" Strips and Angle Brackets, and the 1" Pulleys forming the travelling wheels are fixed by their set-screws on bolts passed through the 5½" Strips.

The bearing for the boom is provided by two 3" Pulleys. One of these is attached to the Flanged Plate 1 by two Double Brackets and two ½" Reversed Angle Brackets, and the other is fixed to a 2½" × 1½" Flanged Plate 2 by two ⅜" Bolts. Washers are placed on the ⅜" Bolts to raise the Plate 2 clear of the rim of the Pulley. A 2" Rod is fixed in the lower 3" Pulley, and is passed through the boss of the upper Pulley. A 1" Pulley 3 is used to clamp this assembly together.

A 2½" × 1½" Flexible Plate 4 is bolted to each flange of the Plate 2, and to these Plates the main boom girders are attached. The upper girders on each side are represented by 12½" Strips extended by 5½" Strips, and the lower girders are 12½" Strips and 3½" Strips 5. The upper girders are bridged across by 2½" × ½" Double Angle Strips at the front and rear and in the centre, and they are linked to the Strips 5 by 2½" Strips. The upper and lower girders are connected at the front by Fishplates.

The sides of the cab are 5½" × 1½" Flexible Plates, and the roof is attached to Obtuse Angle Brackets supported by 2½" Strips bolted to the sides. The roof is made from two 5½" × 2½" Flexible Plates overlapped four holes and edged by Formed Slotted Strips. The Flexible Plates are curved to shape before the Formed Slotted Strips are bolted in position.

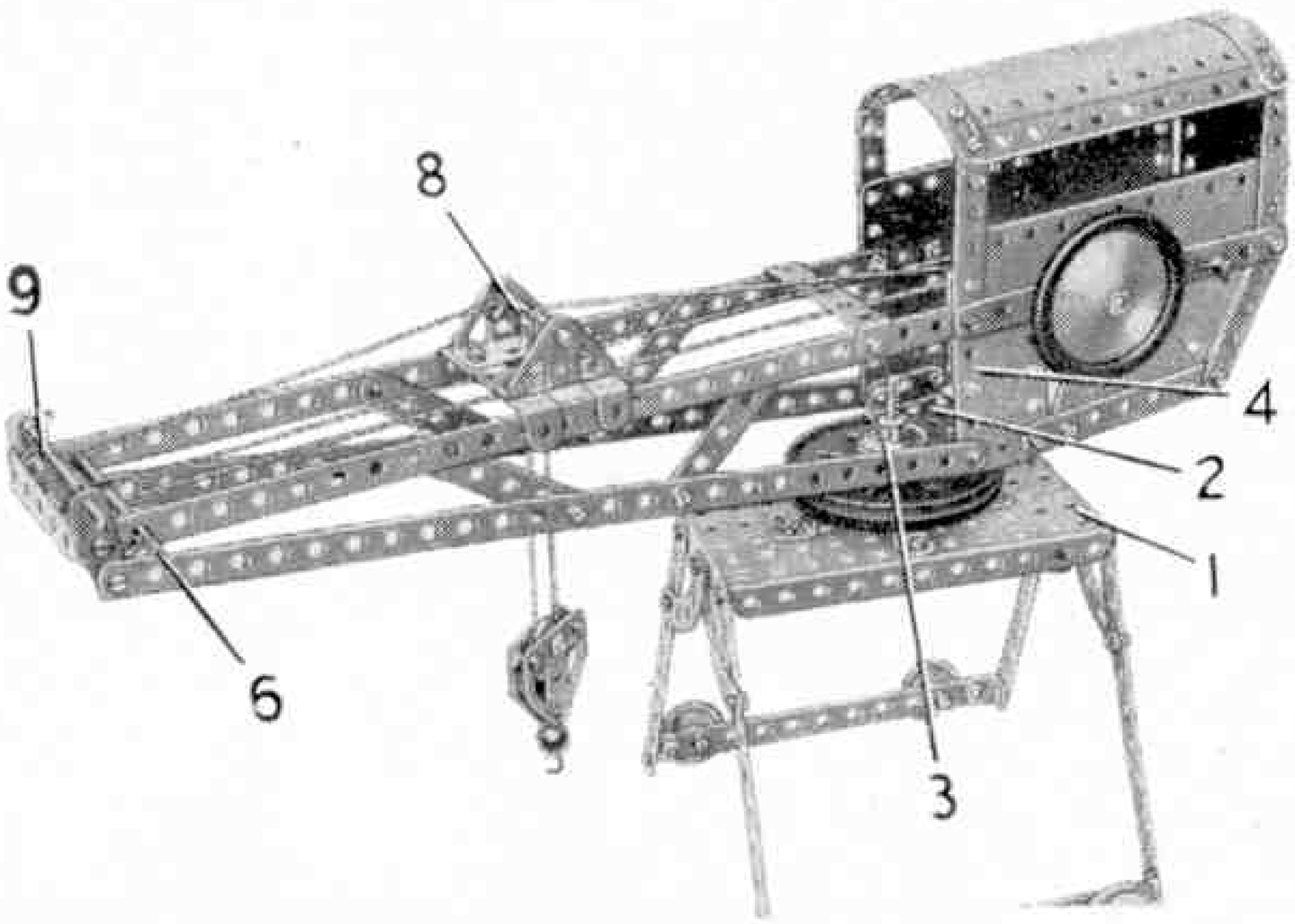


Fig. 2. In this view of the crane the arrangement of the operating Cords can be seen.

The hoist carriage consists of two 2½" × ½" Double Angle Strips bolted to Trunnions. A length of Cord tied to the front of the carriage is led over a Rod 6 and is passed two or three times round a 4" Rod in the cab. The end of the Cord is tied to the rear of the hoist carriage. A handle on the 4" Rod is provided by a Bush Wheel fitted with a ⅜" Bolt.

A length of Cord tied to a Cord Anchoring Spring on a Crank Handle 7 is passed over a 2" Rod 8 mounted in the Trunnions, and round a ½" Pulley in the hoisting block. The Cord is led again over Rod 8 and is then tied to a Rod 9 supported in Fishplates at the front of the boom. This method of arranging the Cord ensures that the load remains at the same level when the carriage is traversed. The hoisting block consists of two Flat Trunnions connected by ⅜" Bolts, and the ½" Pulley is free to turn on a further ⅜" Bolt. A small Hook is bolted to the apex hole of one of the Flat Trunnions.

The back of the cab is filled in by 2½" × 2½" Flexible Plates bolted to Angle Brackets. The model is completed by adding to the boom bracing strips made from 2½" Strips and a 2½" × ½" Double Angle Strip. It should be noted that these Strips are attached only to the lower girders of the boom.

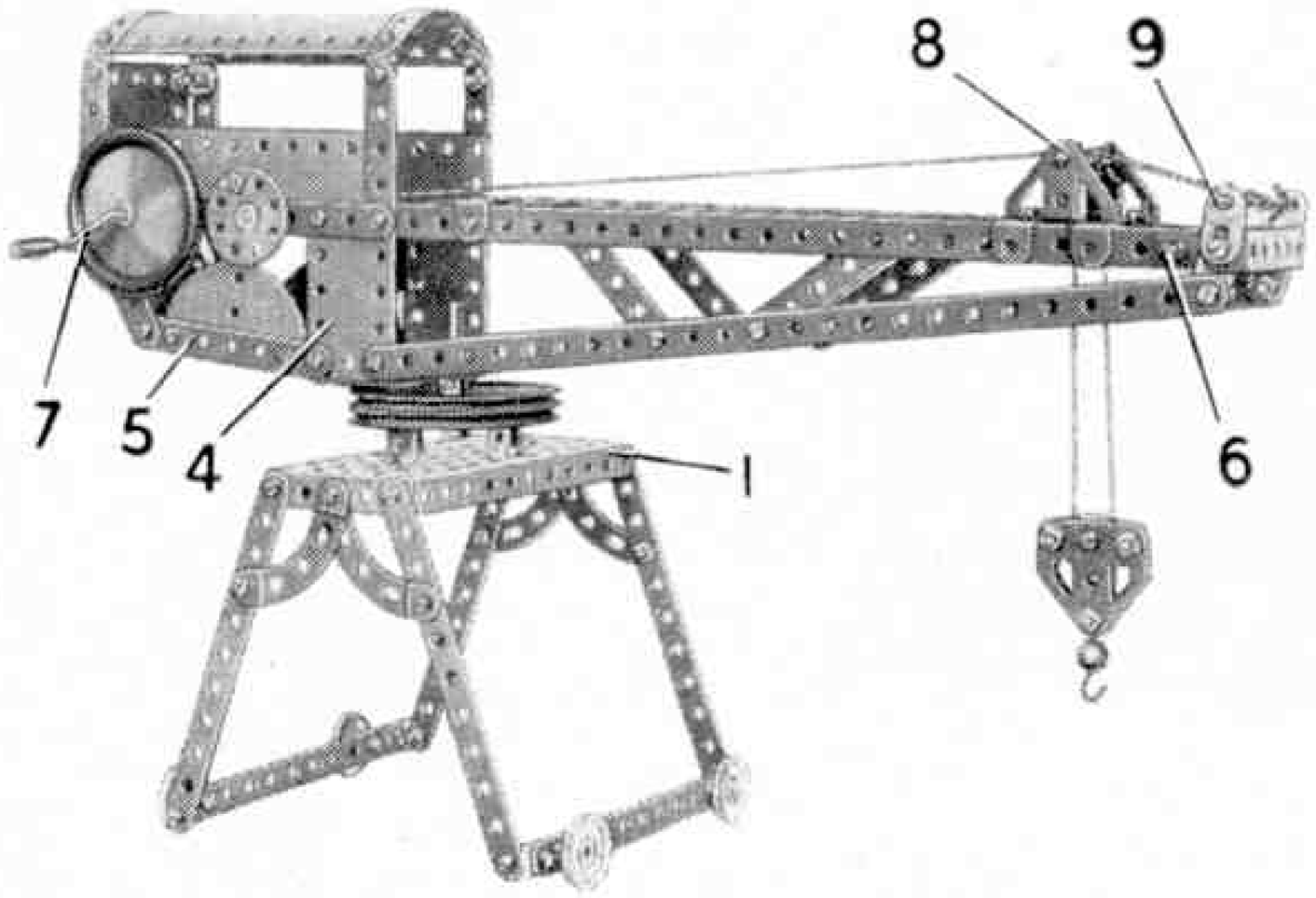


Fig. 1. An easy-to-build crane designed for Outfit No. 4.

Parts required to build the Hammerhead Crane: 4 of No. 1; 8 of No. 2; 2 of No. 3; 9 of No. 5; 4 of No. 10; 2 of No. 11; 6 of No. 12; 4 of No. 12c; 1 of No. 15b; 2 of No. 16; 2 of No. 17; 2 of No. 19b; 1 of No. 19g; 5 of No. 22; 1 of No. 23; 1 of No. 24; 7 of No. 35; 81 of No. 37; 6 of No. 37a; 8 of No. 38; 1 of No. 40; 6 of No. 48a; 1 of No. 51; 1 of No. 52; 1 of No. 57c; 4 of No. 90a; 6 of No. 111c; 2 of No. 125; 2 of No. 126; 2 of No. 126a; 1 of No. 176; 2 of No. 187; 2 of No. 188; 2 of No. 189; 2 of No. 190; 2 of No. 192; 2 of No. 214; 2 of No. 215.

Meccano "Coronation" Competition

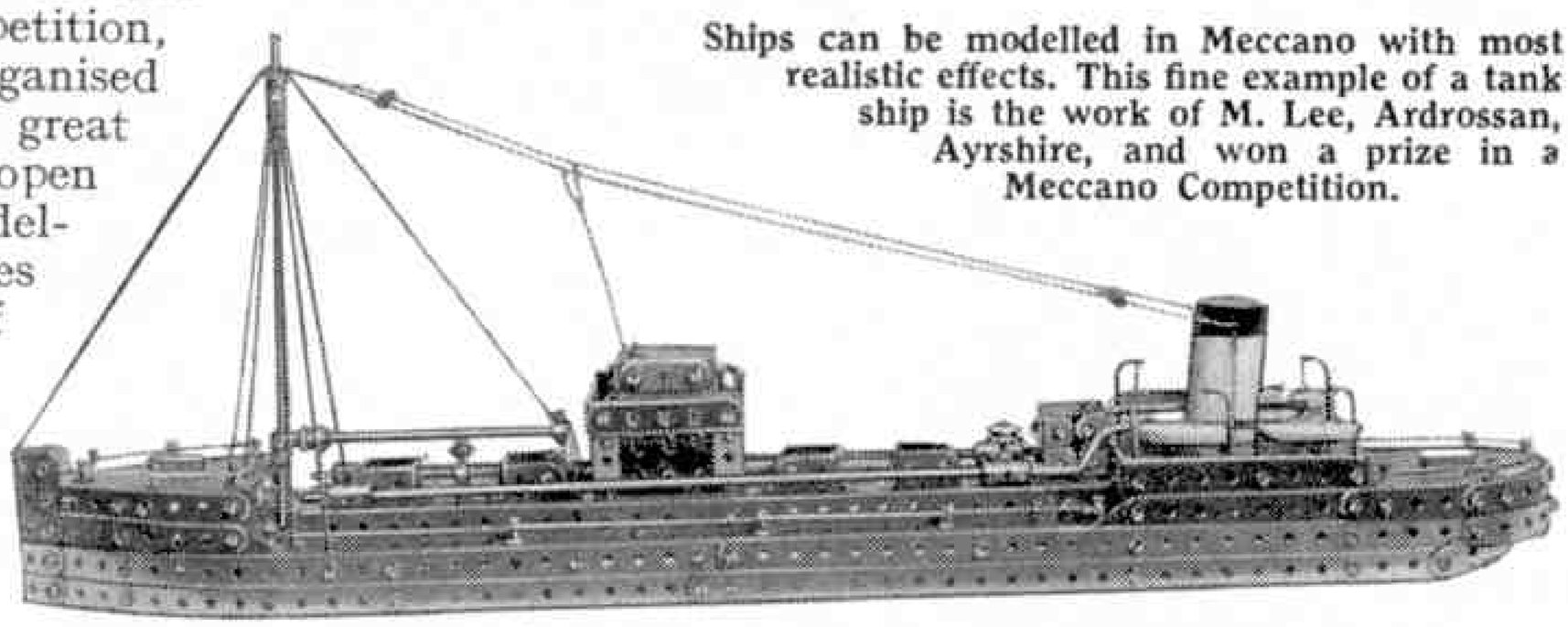
Fine Prizes for Topical Models

WE are taking this last opportunity to remind Meccano model-builders everywhere that there is still time to send in entries for the novel Coronation Competition that is now running. Those who wish to take part in the Contest and have not yet sent in their entries, however, have no time to lose, for the Competition closes at the end of this month. This Competition, which has been organised specially for this great Coronation Year, is open to Meccano model-builders of all ages living in any part of the world, and a fine list of Prizes will be awarded for the best models received.

These models must be based on subjects connected in some way, even quite remotely, with the Coronation Ceremony, or the public celebrations. Examples of suitable subjects we might mention are the various Crowns, the State Coach, Coronation Chair, the arches erected in the Mall and famous London buildings such as Buckingham Palace, Westminster Abbey, St. Paul's Cathedral and Admiralty Arch, under which the Coronation procession will pass on its way down the Mall. Every model-builder will be able to think of plenty of other fascinating and suitable subjects for models.

The prizes to be awarded for the best models received are as follows:

First Prize, Cheque for £5/5/–. Second, Cheque for £3/3/–. Third, Cheque for £2/2/–. There will be also Twenty Prizes, each of £1/1/–, and Twenty Prizes each of 10/6. Certificates of Merit also will be awarded.

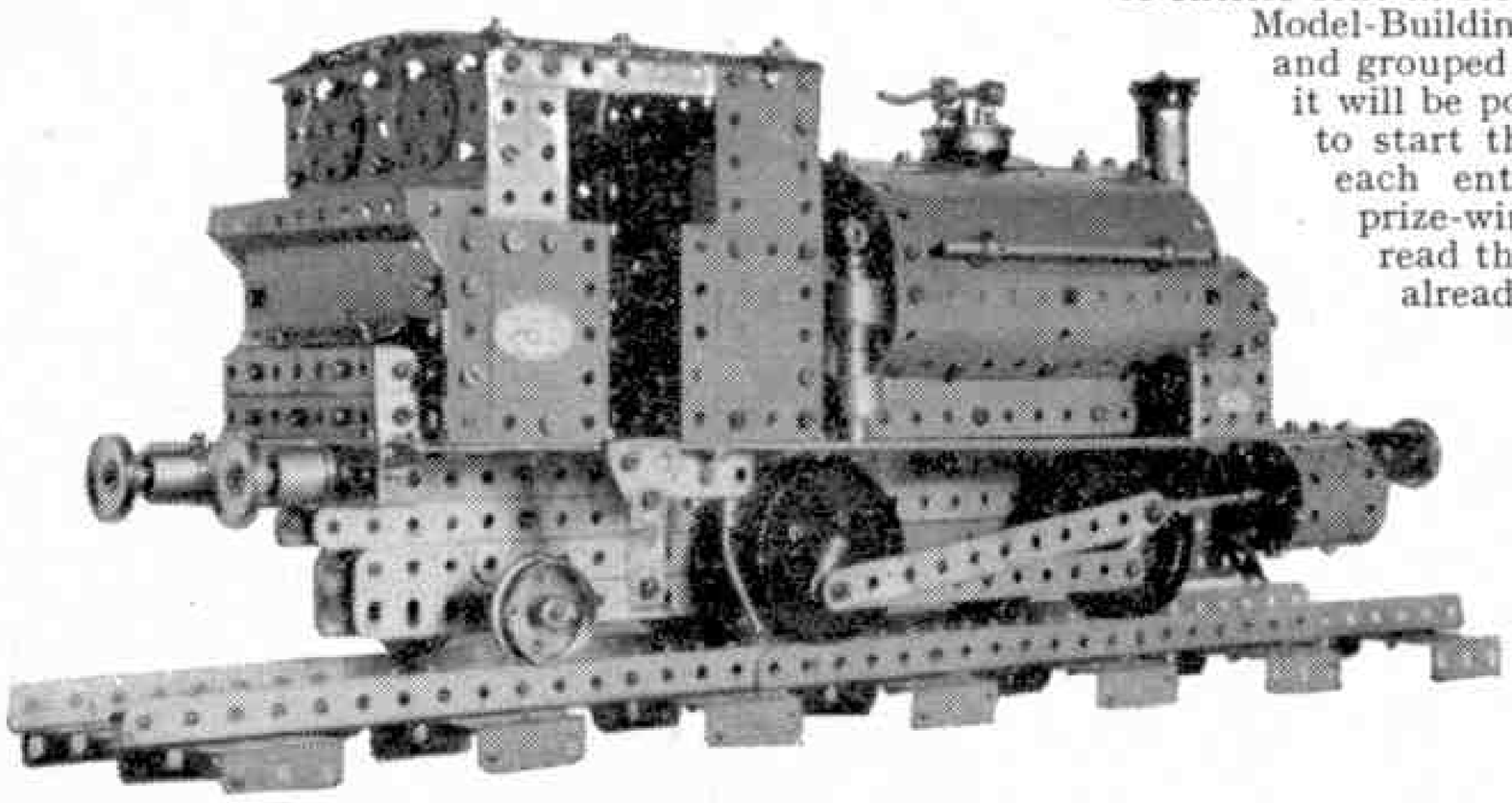


Ships can be modelled in Meccano with most realistic effects. This fine example of a tank ship is the work of M. Lee, Ardrossan, Ayrshire, and won a prize in a Meccano Competition.

Photographs or drawings of models only are required. *Actual models must not be sent.*

Entries should be addressed to *Coronation Model-Building Competition, Meccano Ltd., Binns Road, Liverpool 13.*

All entries, no matter whether they are sent by readers living in Great Britain or residing Overseas, will be grouped together. There will not be a separate Overseas Section. Don't forget! The Closing Date is 31st May.



Builder of this saddle tank locomotive is P. R. Wickham, Leicester. The model is based on a locomotive built in 1885 for use on the old Caledonian Railway.

GETTING ON WITH THE JOB!

As I write these notes early in April, the hundreds of entries sent in for the great Meccano International Model-Building Competition are being sorted and grouped into their correct Sections. Then it will be possible for the Competition judges to start their enormous task of examining each entry and deciding who are the prize-winners. Of course, by the time you read these notes the work of judging will already be under way, and typists will be hard at work typing the hundreds of letters that will carry the good news of their success to each of the lucky competitors.

I have not yet been able to examine any of the entries closely, but I can say that some interesting work has been done in each Section. It would not of course, be fair for me to pick out any particular models for special mention until the judges' decisions are known, but I can assure competitors that the results will be announced just as quickly as is possible.

Club and Branch News

WITH THE SECRETARY

MORE PHOTOGRAPHS PLEASE!

By now the programme of the first of the Summer Sessions will be well in hand in Clubs and Branches, with emphasis on outdoor activities whenever the weather permits. Cricket matches, swimming, rambles, cycle runs, treasure hunts, visits to places of interest—these are basic features of the Summer programme. This is the time, too, when members possessing cameras should be encouraged to use them on outings and sports occasions, so as to build up a fascinating record of Club or Branch activities—always remembering that good pictues are welcome at Headquarters for possible reproduction on this page. Such a nice bit of publicity pleases everybody concerned, so don't forget to send me prints.

MERIT MEDALLIONS

Club Leaders will, I hope, have had time to assess the achievements of members during the second Winter Session, and I look forward to receiving soon their nominations for the award of the two Merit Medallions available in each Club. This recognition of good work done is always appreciated, and helps to further that spirit of unity among the members that is essential to successful Club life.

PROPOSED CLUB

CONSETT—Mr. J. N. Barron, 4, Garden Place, Leadgate, Consett, Co. Durham.

MECCANO CLUB RECENTLY AFFILIATED

STRENSALL (YORK) M.C.—Mr. T. Heslewood, "Chrislyn," West End, Strensall, Nr. York.

BRANCH RECENTLY INCORPORATED

No. 543—2ND SLIGO SCOUT MODEL RAILWAY CLUB—Mr. D. Welsh, 25, Stephen Street, Sligo, Eire.

CLUB NOTES

COPDOCK AND WASHBROOK M.C.—Some excellent models have been built at recent meetings. A Film Show has been held, and Table Tennis played with Copdock Youth Club. Club roll: 12. *Secretary:* K. E. Whitten, The Street, Copdock, Nr. Ipswich, Suffolk.

WORCESTER COLLEGE FOR THE BLIND M.C.—Model-building Competitions continue to be very popular. Visits to places of interest are an important feature of the Club programme, and have ranged from a tour of the Worcester Porcelain Works to places as far afield as the Austin Motor Works at Longbridge and Cadburys of Bourneville. Club roll: 20. *Leader:* Mr. R. D. Follett, Worcester College for the Blind, Worcester.

BURY GRAMMAR SCHOOL M.C.—The former Secretary, home on leave from Germany, visited the Club and gave a most interesting talk on German railways. A senior member has given a talk, illustrated by film strips, on the Tal-y-Llyn narrow gauge railway, and at another meeting the Secretary gave a talk on Gears. The subject of a recent Model-building Evening was a working crane. Club roll: 40. *Secretary:* John A. Strafford, 13, Maple Grove, Prestwich, Nr. Manchester.

AUSTRALIA

WEST WOLLONGONG M.C.—Cycles rides are a popular feature of the Summer programme. Model-building continues to be the main activity, however, and the subject of a recent competition was a Meccano windmill. A lantern slide projector has been constructed and is now in regular use. The Stamp Section is making good progress. A small typewritten Club Magazine has been started. The Leader is endeavouring to arrange a model railway as an additional activity for members. Club roll: 8. *Leader and Secretary:* Mr. J. Pagett, Corner Eastern and Byrarong Avenues, Wollongong, Australia.

SOUTH AFRICA

CAPE PENINSULA (CAPE TOWN) M.C.—The Club continues to make steady progress, with meetings well attended and many of them devoted to model-building. Plans are in hand for a two-day Exhibition. Club roll: 15. *Secretary:* Mr. F. E. Goy, "Dimson Villa," Summerley Road, Kenilworth, Cape Town, South Africa.

BRANCH NEWS

MAGDALEN COLLEGE SCHOOL (OXFORD)—At one meeting a track was laid down on two benches in the Physics Laboratory. The Secretary has given a talk on the Snowdon Mountain Railway. The 100th meeting was celebrated by a fine tea, each member bringing cakes or sandwiches, and was rounded off by an interesting competition made up by the Chairman about a variety of subjects connected with transport. *Secretary:* D. F. Moss, 61, Victoria Road, Summertown, Oxford.

HINDHEAD AND DISTRICT—There have been discussions on the Branch layout and on the purchasing of new track. A Librarian has been appointed to take charge of the steadily growing Branch library. *Secretary:* B. J. Hinde, "Hindhead Brae," Hindhead, Surrey.

Members and Officials of the Boek in Waterland (Holland) M.C., with Mr. E. Smit, Leader, third from the left in the back row. Next to him, on his right, is Mr. P. Bakker, Secretary. This enthusiastic and rapidly growing Club was affiliated with the Meccano Guild in August last year, and carries out an attractive programme.

HORNBY RAILWAY COMPANY

Running *The Ashford Railway*

By the Secretary

I SUPPOSE most Hornby-Dublo layouts incorporate a continuous main line. This is almost inevitable if long runs are to be made on a system that has to be fitted into a comparatively small space. The layout seen in my picture, which is being operated by Michael Higher, of Leeds, is no exception. The baseboard is 6 ft. long by 4 ft. wide, so that a continuous main line is really necessary to give realistic running.

Michael is one of the two partners who own the *Ashford Railway*, as the system is called. He is fortunate to have the help and interest of his father, Mr. A. H. Higher, and they have developed their railway between them.

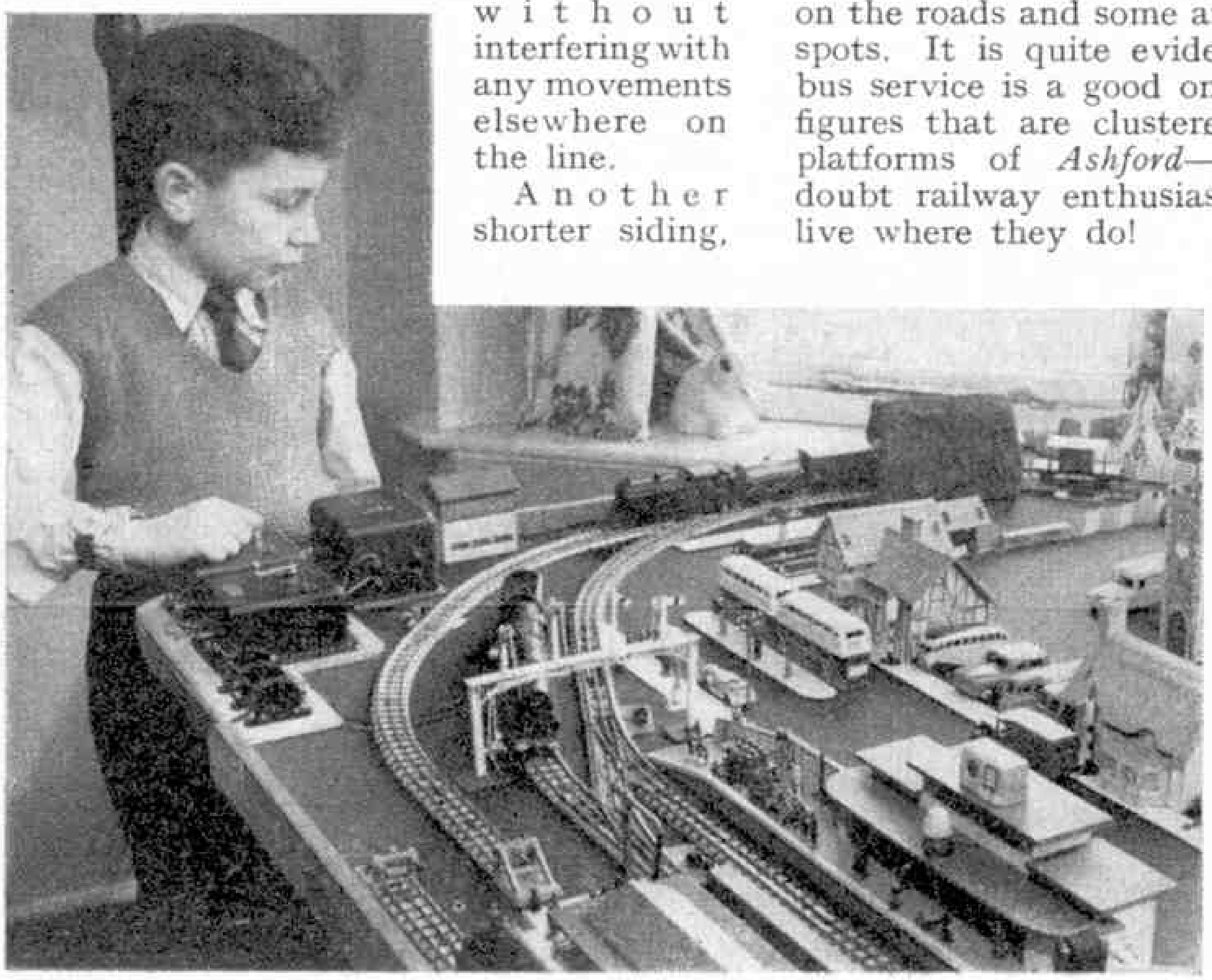
Where the *Ashford Railway* differs from many others is in the arrangement of several lengthy sidings and storage roads, and that is one reason why I am glad to introduce it to other enthusiasts. The goods train that Michael is working in the picture is heading into one of these storage sidings, which ends just short of the goods depot in the foreground. There is an Isolating Rail near the outer end of the siding, so the train can be held there on its arrival, without interfering with any movements elsewhere on the line.

Another shorter siding, occupied by the engine and tender standing beyond the signals, forms an engine road only. Near the edge of the baseboard can be seen part of a long siding that extends past the goods depot right to the corner of the board. It can be reached from the main line through a succession of points, and wagons requiring to be dealt with in the yard or at the goods platform can stand there.

Owing to the restricted length of the shunting spur beyond the last set of points, only a few wagons at a time can be worked into or out of this storage road. It might be thought that this is not a very convenient arrangement. Really, it all depends on one's point of view. Some operators do not mind restricted yard limits, as they like the shunting to and fro that this involves. With careful "driving" such operations can be quite successful. Indeed, judging movements to fine limits is part of the fun!

Near *Ardsley Crossing*, not shown in this picture, a track leaves the main line to reach an engine shed in one corner of the board.

The railway serves quite a busy little township of miniature buildings. There are plenty of Dinky Toys motor vehicles on the roads and some are parked in likely spots. It is quite evident that the local bus service is a good one! The miniature figures that are clustered thickly on the platforms of *Ashford*—all of them no doubt railway enthusiasts!—are lucky to live where they do!



A Hornby-Dublo Railway that is notable for its lengthy sidings and storage roads, with Michael Higher, one of the joint owners, busy working a goods train into one of the sidings.

Traffic Working in Hornby-Dublo

THOSE Hornby-Dublo owners who do not aspire to timetable working frequently have a system of working or a cycle of operations that they have found satisfactory, with variations to occupy shorter or longer periods. As with operations, so with the traffic that the railway is supposed to handle, for the two are related to one another. The running of the railway really should have some idea behind it, and any traffic scheme affects the rolling stock we require and the way in which we use it.

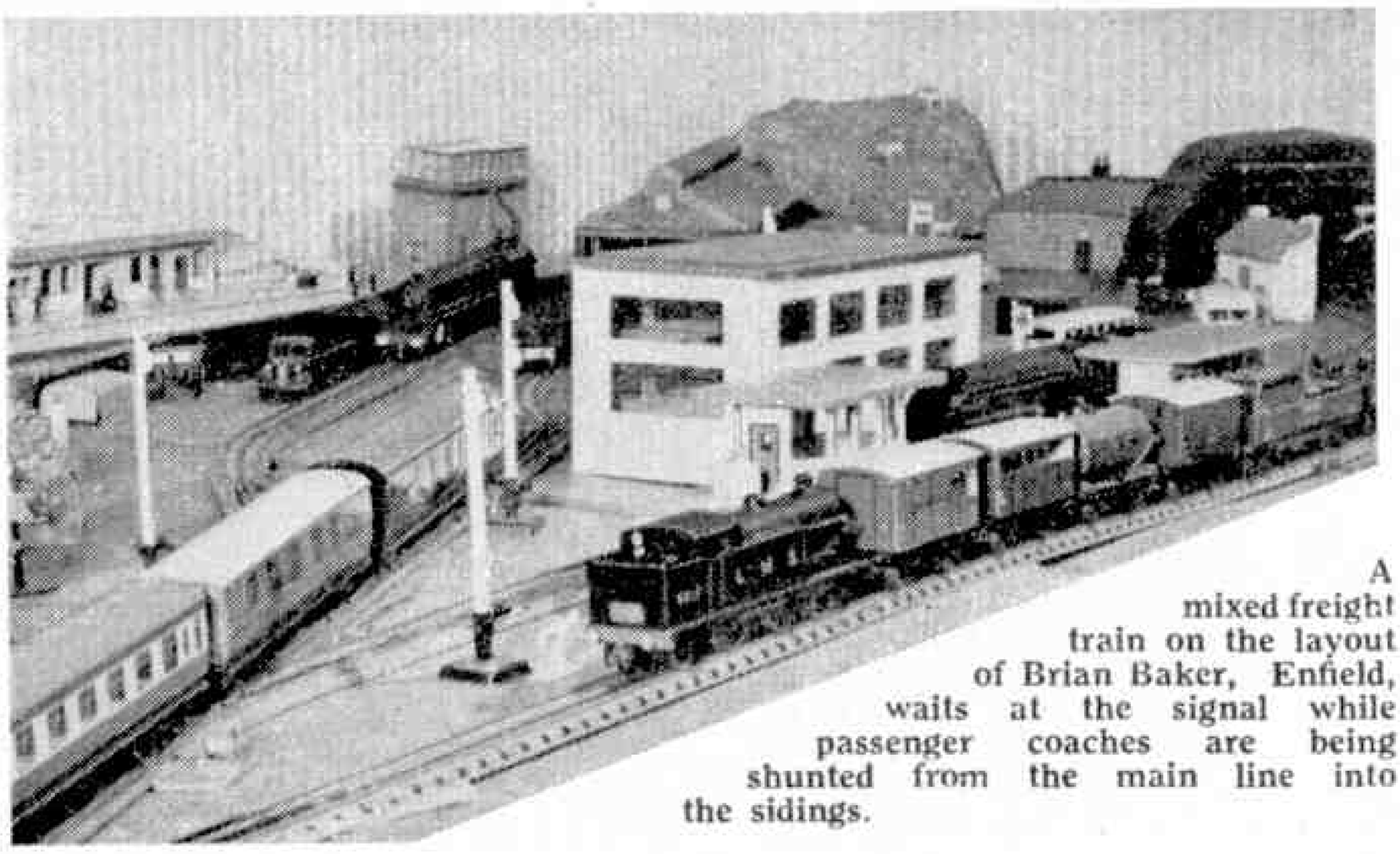
Passenger trains are easily provided for, as the Hornby-Dublo Coaches appropriate for either the London Midland *Duchess* or the Eastern Region streamlined Pacific make up into splendid main line expresses. But for the present we have to use them for locals as well, behind the Hornby-Dublo standard Tank, as the Hornby-Dublo System at present only includes corridor passenger stock.

The ideal formation includes a brake-third at each end of the train, so that it is ready to travel in either direction as required.

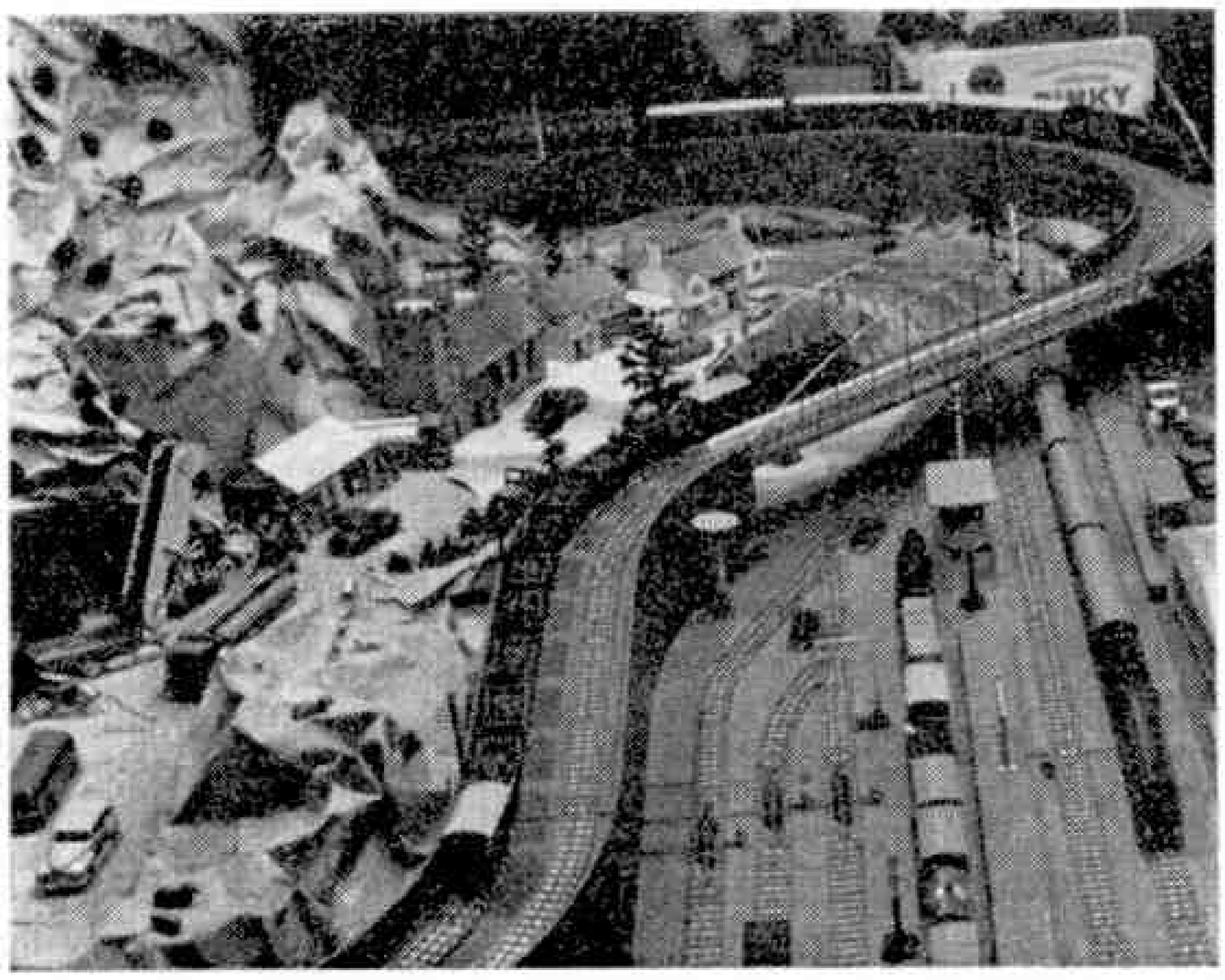
Variations may occur if the train consists of two sections, or at least if it conveys, even over part of its journey, a through coach destined for a branch terminus. This is the kind of traffic working that makes our railway realistic. An occasional Van for goods, parcels or possibly perishable freight can be added to the formation, although there is no reason why such an arrangement should not be a regular one on particular trains. The working necessary, say at *Dublo Junction*, to attach extra vehicles to main line trains, or to detach them, can be really good fun.

Purely freight traffic on Hornby-Dublo layouts can be well varied because of the selection of goods vehicles that is available. A representative mixed freight train can be readily developed from the standard Goods Train Set, and a train of Hornby-Dublo Coal Wagons also looks good.

Here is a useful hint that may be new to many enthusiasts. *The Fish* is quite an institution on many real routes, so why not run such a train on your own railway? There is a Hornby-Dublo Fish Van that is just the thing for making it up.



A mixed freight train on the layout of Brian Baker, Enfield, waits at the signal while passenger coaches are being shunted from the main line into the sidings.



Various trains on a special Hornby-Dublo display layout arranged by G. J. Grant Limited, Oswestry. Photograph by J. A. Hignett, Oswestry.

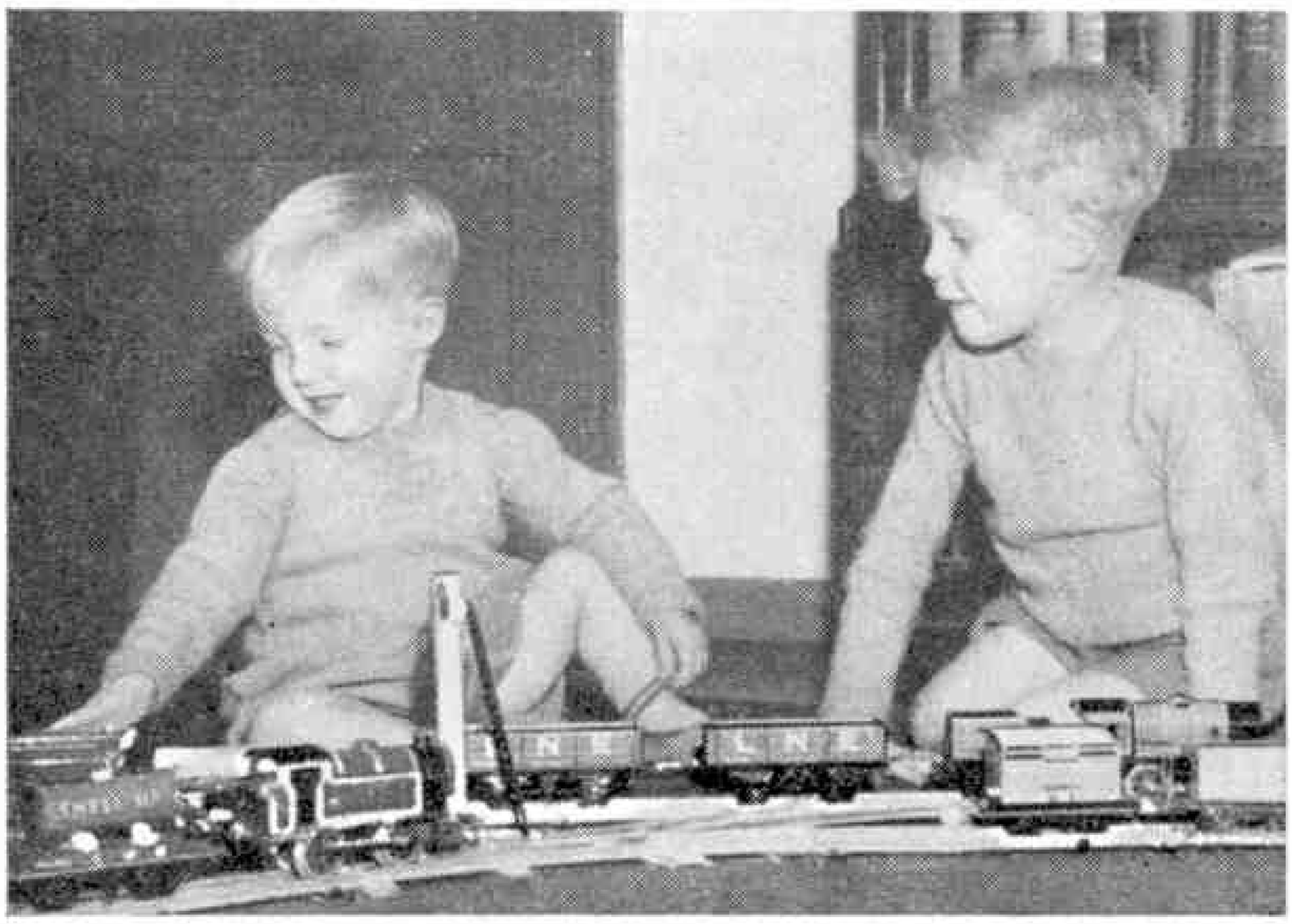
Space for a Hornby Railway

IN one of the accompanying photographs you see two happy H.R.C. members, Richard and Christopher Bedford, of Scunthorpe, busy on the floor with their Hornby railway. The floor is quite a good place to have a railway. One gets down to things, literally, more so than on a table, and of course if there is any mishap such as a derailment a train does not have far to fall!

Richard and Christopher are lucky in having a fair amount of miniature railway equipment. It is obvious that they have very good times with it, and so does their father, Mr. W. H. Bedford, who, incidentally, took the photograph.

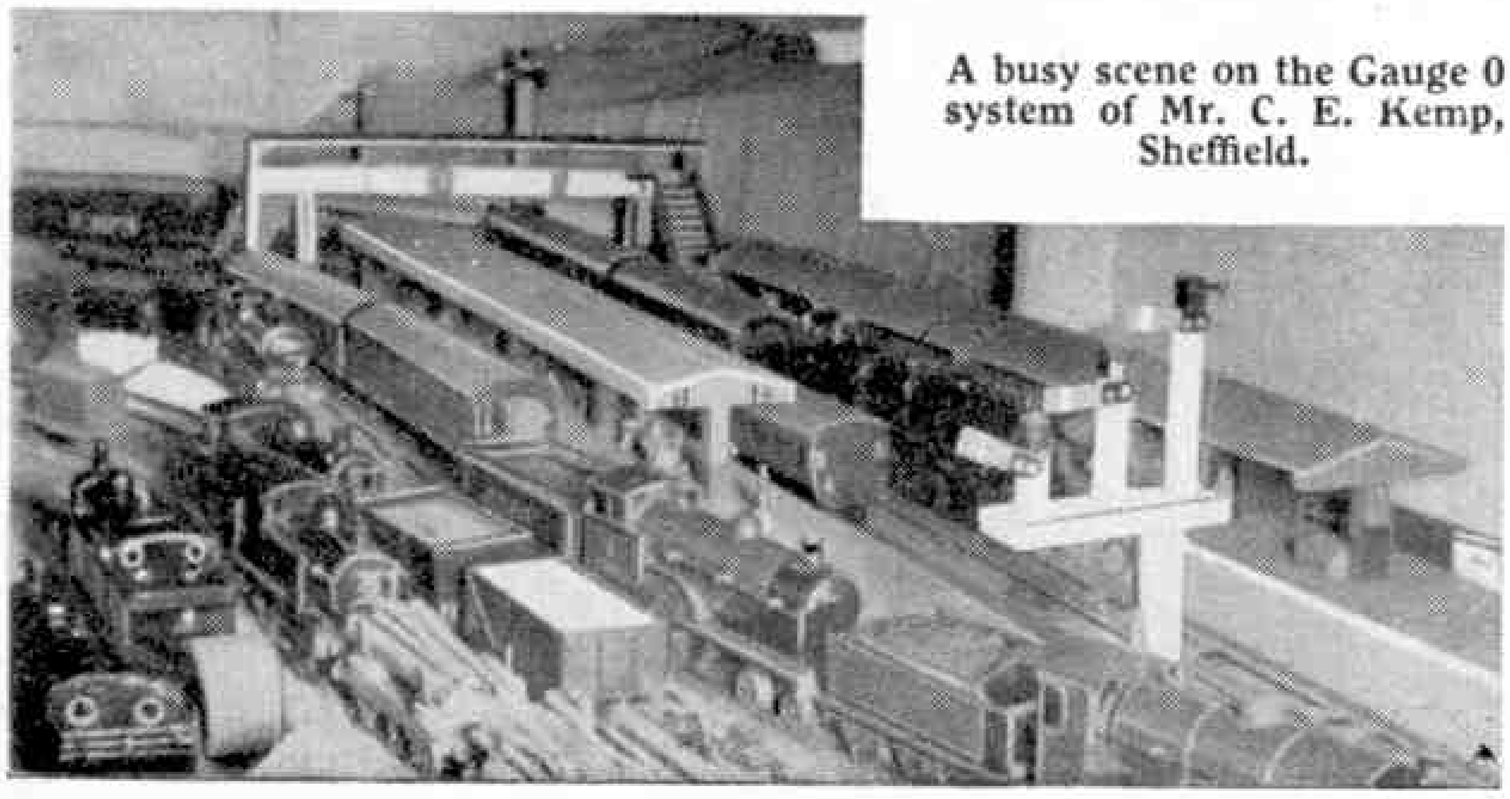
There are some disadvantages to floor sites, especially where the railway is laid, as it usually is, in a living room. The track is liable to damage, in spite of every care, and engines and rolling stock running over a carpet are liable to pick up a certain amount of dust, or even fluff, which settles best on oily working parts, exactly where we do not want it. Besides, the Hornby railway on a table or specially-made baseboard is more comfortable to manage than one on the floor, except for very small boys—or girls! Yes, there are girl members of the H.R.C.

On the other hand a table or board is usually restricted in size and this means that the railway cannot spread very far. In the summer months many miniature railway engineers operate their layouts out-of-doors. It may be a little early in the year to talk about this sort of thing, but given a good site, and good weather, railwaying out-of-doors can be very enjoyable. There is usually plenty of space, so that long stretches of main line can be laid down.



Richard and Christopher Bedford have great fun with their Hornby Trains, as you can see from this picture. The layout is on the floor, where they can easily get at it, and if anything comes off the track it cannot fall very far!

The lower photograph on this page shows part of a system that practically combines the advantages of both indoor and outdoor situations. This belongs to Mr. C. E. Kemp, B.Sc., of Sheffield, and it has been through several stages of development since it was begun in 1927. It is accommodated inside a garden shed in which is the principal station *Sheffield (Victoria)*, while there are fairly lengthy runs outside in the form of twin loops that together provide a continuous run. In the outside section of the line there are an embankment and a tunnel, both made of concrete. The idea of the tunnel is to allow trains to run down into a brick-built air-raid shelter, a relic from the war. These things have their peace-time uses.



A busy scene on the Gauge 0 system of Mr. C. E. Kemp, Sheffield.

BOOKS TO READ

Here we review books of interest and of use to readers of the M.M. With certain exceptions, which will be indicated, these should be ordered through a bookseller.

"THE BOOK OF THE CORONATION"

By F. Hunt and A. Lindsay
(Mayflower Publishing Co. Ltd. 3/6)

The Coronation Service and Procession is much more than a magnificent public spectacle; it is indeed a ceremony, both religious and civil, that has its roots deep in history. What the ritual and pageantry mean is clearly explained in this neat little book, and its simple and accurate descriptions and the 50 coloured illustrations it contains will help all its readers to a more complete understanding of the great event, whether they will be fortunate enough to see the Coronation in person or on television, or will have to visualise what takes place from oral or written description. There are forewords by the Rt. Rev. The Lord Bishop of London and the Lord Mayor of London.

THE LOCOMOTIVES OF THE GREAT WESTERN RAILWAY

Part Two — Broad Gauge
(R.C.T.S. 10/–)

Until 1892 the G.W.R. employed broad gauge track having a width of 7 ft. 0¼ in. between rails. The strong individuality of Swindon locomotives really dates back to the earliest days of this gauge. Not in respect of their gauge alone did these early G.W.R. engines differ from those used elsewhere. Their size, their domeless boilers, their slotted-out frames and their names were all characteristic, and *Tornado*, the last broad gauge engine, built in 1888, followed substantially the same design as the first, built in 1846.

These engines are described in Part Two of *The Locomotives of the Great Western Railway*, a worthy companion to earlier parts of this Railway Correspondence and Travel Society publication previously noticed in the *M.M.* In its 56 pages it gives a fascinating account of the various classes, with plentiful drawings and other illustrations. One of these, a shed picture of particular charm, reproduces what is believed to be one of the earliest railway photographs ever taken. Very pleasing too, is the coloured frontispiece, showing a former Bristol and Exeter "single" tank as altered to a tender engine. General notes, some dealing with performances, an account of the Broad Gauge as such, and a list of Broad Gauge Locomotives supplement the ordinary text of the booklet, in the preparation of which much careful and detailed research has been carried out.

Copies can be obtained from the Hon. Publications Officer, R.C.T.S., Mr. D. H. Wakely, 18, Holland Avenue, Cheam, Surrey, at a cost of 10/– including postage.

"PRELUDE TO SPACE"

By Arthur C. Clarke
(Sidgwick and Jackson 9/6)

In this book the Chairman of the British Interplanetary Society tells the story behind the launching of the first rocketship to the Moon. It is a fascinating yarn, in which the problems and hazards confronting the pioneers of space-flight are well portrayed without the exaggerations and extravagant language that mar some books of this kind.

Briefly, the story is concerned with the task of despatching the first moon rocket on its space voyage. It begins in London, where calculations are being completed and those responsible for the scheme, with the men from whom the crew are to be chosen, are gathered together. Then the reader accompanies these experts to Australia, where the rocket has been constructed and is practically ready for flight. He lives with these men until the rocket is launched and sails into "unknown perils and wonders."

The book, although a story in form, is well worth study by all who have confidence in the future of man in space.

"TEACH YOURSELF CYCLING"

By R. C. Shaw

"TEACH YOURSELF SWIMMING"

By Frank Waterman
(English Universities Press 6/– each)

Cycling provides millions of people in Britain with a cheap and easy means of getting to and from school or their daily work, and it is rather surprising that only a small proportion of them indulge in cycling as a recreation. The aim of *Teach Yourself Cycling* is to help the "unfortunates" to realise how much enjoyment they are missing, and by friendly instruction teach them how to ride a bicycle with the minimum of effort and maximum of comfort; how to choose the kind of machine best suited to their requirements and, having acquired it, how to take care of it. The chapters on road usage should help all cyclists, whether they ride for pleasure or merely for convenience, to attain the highest possible standard of roadmanship.

Teach Yourself Swimming gives similar practical and comprehensive instruction, by easy stages, in mastering another valuable art. After explaining the elementary principles and giving preliminary lessons designed to enable the learner to gain confidence in the water, the author deals in detail with the various strokes, following this by practical advice on diving, water polo and life-saving.

Both books are well illustrated.

"THE TRACK OF THE IRONMASTERS"

By W. McGowan Gradon, B.A.

The Track of the Ironmasters is a good title for a book dealing with the Cleator and Workington Junction Railway, a line that was absorbed into the L.M.S. in 1923. Back in the 1870s the West Cumberland district was already served by the well-established Furness and L.N.W.R. lines and by the then independent Whitehaven, Cleator and Egremont Railway, when an increase in freight charges by the latter stung a number of local ironmasters into promoting an independent railway, opened in 1879.

The author, who has made a special study of the railways in this region, truly says that the new line thus brought into existence ran like a main traffic artery through an area honeycombed with mines, quarries and ironworks. As might be expected, coal, coke, iron ore, limestone and steel formed the main traffic. Passenger services were provided, however, and these were maintained under the L.M.S. regime until 1931.

As a record of a small but independent and industrious system the book makes interesting reading. A map helps one to follow the ramifications of the railways in the area concerned and illustrations show some of the stations, engines and equipment.

Copies can be obtained from the author at Pear Tree Cottage, Oldfield Lane, Altrincham, price 6/6 including postage.

"TABLE TENNIS"

By Leslie Woollard (Foyle 2/6)

Table Tennis has developed from the novel British parlour game of half a century ago into an international sport, and, with the possible exception of Tibet, it is played in every country in the world. Mr. Woollard here tells the remarkable history of the game, and explains what is needed to play it well, with thoroughly practical advice on improving play and developing the technique that makes for championship success. There are over 70 excellent line drawings.

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(Illustrated). Inc. **scarce** Canada **Jubilee**. Free to collectors asking to see our famous **'Quality'** approvals. Send 3d. for our postage and lists. **IF** you wish you may join **"THE CODE STAMP CLUB."** Sub. 1/-. You rec. **Badge,** Membership Card listing Fine Gifts. Approvals sent monthly.
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For other Stamp Advertisements see also pages 270 and xix.

Stamp Collectors' Corner

By F. E. Metcalfe

IRELAND FOR EVER

IN spite of the very unfortunate start that Irish stamps had, they are very popular today, particularly in Great Britain and the U.S.A. For some time I have been intending to deal with them in an article. Somehow I kept putting it off, but now, after seeing the pair of stamps issued recently in honour of Thomas Moore, I am simply bursting to write my notes, for it is a long time since I have seen any postage stamps that have delighted me so much as these, the first to be printed in Dublin by the recess process, even if there has been a slip in the spelling of Eire.

I have always had a warm spot for Irish commemorative issues. I am quite aware that the designs have had many critics. What I like about them is the fact that, good designs or bad, they are Irish productions, the work of the nationals of the country issuing the stamps, and of the Irish Post Office, which always plays so fairly with collectors. Not for Dublin to produce scraps of paper costing a fraction of a cent, and to sell them to hobbyists at umpteen times the cost! Few postal administrations can claim such a clean record as that of Eire.

But, I can hear some collectors say, how do I make out that Ireland had a bad philatelic start, when both dealers and collectors went mad about the overprinted issues that were first released 1922? Oh, they went mad all right. At least many collectors lost their heads, and that is precisely what I am referring to. There was all that crazy rush for a few months, and then the inevitable reaction, and for quite a time stamps that once were literally fought for could hardly be given away. Though all that happened thirty years ago some of the stigma still remains, as far as the overprinted stamps are concerned. But the definitive issues go along their even way, and those who have had anything to say against the designs would have a surprise if they were to see how attractive is a mint collection of Ireland containing only stamps issued since 1923.

As for used stamps, they provide another angle to the collecting of Irish issues, which can give endless fun. A friend of mine came over from South America for a holiday just before the recent World War started. Caught over here by that war, he decided to remain in Ireland for a time, and as he was restless and energetic he immediately set to work to collect Irish postmarks. I do not think I ever saw a more interesting lot of philatelic material, although its gatherer had probably not spent more than ten pounds on it. It was real postal history. I do not know what happened to the collection after the death of this enthusiast, but I hope it got into hands that would know how to appreciate it.

Ireland's first stamps appeared in February 1922, when a few values of the then current stamps of Great Britain were overprinted. Soon the philatelists got to work, and all kinds of varieties were discovered, and oh, what a to do, as Rob Wilton might say. I am not going to bother much with these overprinted stamps, for they are a bit too complicated for the young collector. I would suggest instead that the Irish collection should be started with the first definitive set, which appeared in December 1922. Overprinted G.B. stamps from 2/6 to 10/– appeared after that, but they can be ignored, and the stamps that followed are all so cheap, with the exception of the values from 2/6 upward and the 3d. overprinted stamp issued in 1941 to commemorate the 25th Anniversary of the Easter Rising. Incidentally, do try to raise the cash to buy this last stamp, for it is very much scarcer than is generally realised.

Well, let us say that you have adopted my suggestion and we start off with the definitive set of 1922. The designs are well worth study, but examine the watermarks carefully, for in 1940 these were changed. The first watermark is in the form of an e, with an s enclosed, whilst the second watermark, which is still in use, has just the e. These watermarks are not very clear, but if the stamps are held up to the light, they show up all right.

As for the design used for the 2/6, 5/– and 10/– stamps, this is really magnificent in its conception. The Commonwealth Catalogue describes it as follows. "*St. Patrick invoking Blessing on Paschal Fire, framed by an outline of the 11th Century Shrine of St. Patrick's Bell.*" R. J. King, much of whose work puts that of our own stamp designers to shame, was the designer.

With the exception of the change in watermark to which I have already referred, there has been no change in Irish definitive designs, though of course we have had a number of interesting special issues. And it is these that can give the collector so much fun for so little outlay. Here the young philatelist can indulge to the full, so inexpensive are most of the stamps. They depict many events in Irish history and, to show how full of meaning some of the designs are, I will again quote the Commonwealth Catalogue in its description of the 1948 "Wolfe Tone" stamp. "*150th Anniversary of Insurrection of 1798. Design Portrait of Theo Wolfe Tone, framed with Laurel Leaves flanked by Pikeman and Ships, depicting the*

(Continued on page 230)

GIGANTIC MONACO FREE

ABSOLUTELY FREE. To all who ask to see a **Selection of Windsor Stamps on Approval** we will send **ABSOLUTELY FREE** this gigantic stamp from **MONACO.** It is illustrated here actual size, and shows the **Judgment of Saint Devote,** a young girl martyr. This large commemorative stamp will improve your very own collection by adding to it value and interest, to the envy of your friends. To obtain it write immediately for (a) Gigantic Monaco Stamp Free (b) a Selection of Windsor Stamps on approval, and (c) enclose 2½d. stamp for posting to you.

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The Australian Gloucester set depicting the Duke and Duchess. This fine used set is of 3 values—2½d. 3½d. and 5½d.

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FREE This beautiful NEW stamp of our QUEEN. Be first to have it, just ask for our approvals, and enclosing 3d. postage.
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For other Stamp Advertisements see also pages 268 and xix.

Stamp Gossip

ADVANCE AUSTRALIA!

SMALL stamps, large stamps, stamps of all shapes and sizes have been issued from time to time, and in all kinds of circumstances, but it has been left to a sister nation in the Commonwealth to think out something really new. Australia has done this all right, for on 11th February six postage stamps were actually issued at once.

Nothing special about that, you will remark. But wait a bit. Three of the stamps had a face value of 3d. each, and the rest of 3½d. They appeared in two sheets, se tenant as philatelists say; that is one joining the other, but in three different designs. This is the explanation which the Postmaster-General gave for such a novel emission: "While Australia had not previously issued stamps drawing attention to an immediate national problem, it was of supreme importance that food production be increased." He went on to say that all the stamps would be prominently inscribed *Produce Food*, with the designs associated respectively with butter, wheat and beef. The three stamps will be included in the same sheet, this course being adopted for ease of production and to obviate Post Office staffs handling three separate sheets of the same denomination in different design.

It is a pity that the letterpress process method of printing was adopted, for this does not lend itself to the production of attractive stamps. Yet while the stamps have obviously been prepared in a hurry, they actually look better than one would think from seeing an illustration.

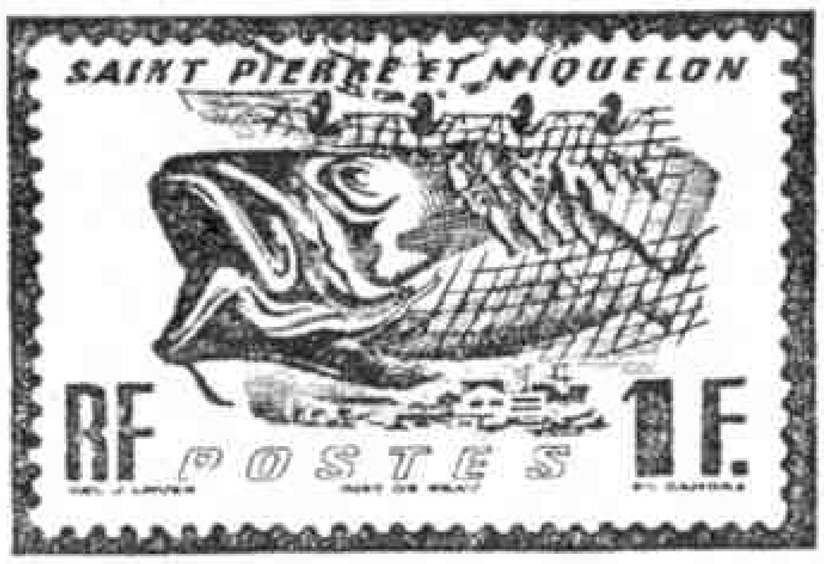
A final word, and an important one from the point of view of stamp collectors. Were they prepared as publicity for a food drive, or as publicity for attracting philatelists' spare cash? I mention this because it has been suggested in various quarters that the latter reason had the more substance in it. Frankly I am sure that while the value of collectors in helping to furnish any publicity was not overlooked, the Australian Government had only one object in view — the production of more food. Collectors here at home should not forget one thing. Australians are anxious to produce more food, not to have more to eat for themselves, or even to have more food that they can export for cash, but to give the 50 millions in Great Britain that extra beefsteak, etc.

Advance, Australia! Thank you for the thought. We appreciate it, and will certainly think of you when we are sticking the novel sextet in our album.

WESTWARD HO!

Here we get what is the first colonial stamp with a *new* design bearing a portrait of Queen Elizabeth. Yes, it is really the first entirely new colonial stamp of the reign featuring the Queen's likeness, for although a Q.E. 2½d. Gold Coast stamp has already appeared, only the portrait was new; the design belonged to the KG VI period.

There have been a number of complaints about later colonial designs, but surely this 4d. Cayman stamp will pass muster. As a matter of fact, there has not been much substance about any of the grumbles, and when we see what we are going to get during the next couple of years or so, I am pretty sure that all will be very satisfied. Just see if I am not right. A little bird has been doing a lot of whispering about forthcoming designs.



WHAT IS IT?

Some time ago I mentioned how popular stamps with odd designs are with many thematic collectors who are forming collections of such things. Recently I was asked which in my opinion was the oddest stamp issued during the last few years. After a good deal of pondering I selected the one illustrated, which is part of a set of the French Colony of St. Pierre et Miquelon. I suppose it is a cod fish that is depicted, but surely one could never guess that, if it were not for the fact that the islands issuing the stamp depend so much on this fish for a livelihood. Be all that as it may, its a jolly interesting design, even if it does look more like a nightmare than a sweet dream. What do you think?

GUESS WHAT?

In January I illustrated the 1 peso Argentina stamp on which was a portrait of the late wife of President Peron. I am asking the Editor to illustrate another 1 peso stamp of the same design, or almost. Now stamp collecting, like scouting, is supposed to teach one to notice details. Has it taught you? Can you spot how the new stamp differs from the old one? I'll give the answer next month.

BITS AND PIECES

Although, as I have already said, I do not think that we are going to be disappointed about the forthcoming colonial designs, it would appear that instead of getting straight sets of all values issued at one time, we are going to get just one or two values at a time, of many of the forthcoming QE issues. Details given in the Crown Agent's Bulletin point to this, so let me give a word of warning. Just leave these odd values alone, and wait until the complete sets have appeared. Then buy what you want. You'll save money if you adopt this plan.

* * * *

Apparently just over five million copies of the Canada "Centenary of First Postal Service" 5c. (Com. No. S21) were issued. By no means a lot, but not a rarity, yet be sure you have your copy.

Careers on our Railways—

(*Continued from page 247*)

for future advancement.

In certain of our main works there is a Works Apprentices' School where, for 12 months of his five years' apprenticeship a boy receives practical as well as theoretical training in his craft.

It will be seen that the trade apprentice, starting on leaving school, can become an engineering apprentice and finally can be selected as an engineering pupil. This means that the highest positions can be reached from the most ordinary beginning by a boy of ability and industry.

In general the procedure in the other departments of railway working is on similar lines to that in the motive power depots, and in all there are excellent prospects of promotion. Conditions of service are excellent. The majority of railwaymen work a 44-hour week, and most of them have regular hours, but the demands of the train services of course make it necessary to work these hours on a shift basis in certain cases.

The greatest interest is taken in the welfare of employees. The Railway Executive have set up a special council, which includes representatives of trade unions, to take steps to promote the safety, health and well-being of the staff, and more and more is being done to make the service attractive and helpful to those in it.

I have already spoken of training for boys in the locomotive and carriage and wagon side, but this is only one aspect of the attention devoted by the Railway Executive to training schemes for all grades of staff. As on the Welfare side, there has been set up a Joint Training and Education Advisory Council concerned in this case with training and education policy and composed of both Railway Executive and Trade Union Officers. This body ensures that not only do British Railways run full-time courses at their own residential staff training colleges, but that practical encouragement is given to employees to study in their off-duty hours subjects connected with their work, by refunding tuition and class fees where incurred in studying approved subjects. It is clear that the Railway, with its wide variety of occupations, offers splendid opportunities for advancement.

Your Camera during Coronation Week—

(*Continued from page 250*)

worth a shot or two.

The exposure for this type of decoration should be quite simple to calculate, but before taking a picture do be sure that you are in the best position for making a really comprehensive record. Try to get a background that will identify itself, and so enable your friends to recognise the spot where the arch or other item was erected.

Finally a word with regard to developing. If possible keep all the illumination shots on the one film and do not hesitate to give rather a little longer in the developer. The lights will not suffer and it is just possible the details in the shadows will benefit. With other subjects correct exposure and correct development give the best possible results.

Atlas, a Fowler road engine completed in April 1928. It is equipped with a dismountable jib crane, the winding drum for which is seen on the off side, just forward of the top of the rear wheel. Photograph by courtesy of S. Mustill, Huyton, the present owner of Atlas.

A fine Hornby-Dublo Train display organised by Barry P. Cocks, Raymond Chadwick and Harold Spence, of Boston, who are here seen operating it. Photograph by A. Jewers.

"BRITISH CARS"

By John Hall (Ian Allan 2/-)

Here is the 1953 edition of this A.B.C. booklet. Several entirely new models appear, among them the Armstrong Siddeley Sapphire and the Wolseley 444. As usual sports cars continue to be notable, and include the Jensen, described here for the first time. Ample details are given of the various cars dealt with, to help with their recognition. A list is given of registration index marks, and a novelty is a suggested number game, with pages for entries of numbers of cars seen, in which the owner is to challenge a friend to race him for the honour of getting a full set of numbers from one to 999.

From Our Readers

This page is reserved for articles from our readers. Contributions not exceeding 500 words in length are invited on any subject of which the writer has special knowledge or experience. These should be written neatly on one side of the paper only, and should be accompanied if possible by original photographs for use as illustrations. Articles published will be paid for. Statements in articles submitted are accepted as being sent in good faith, but the Editor takes no responsibility for their accuracy.

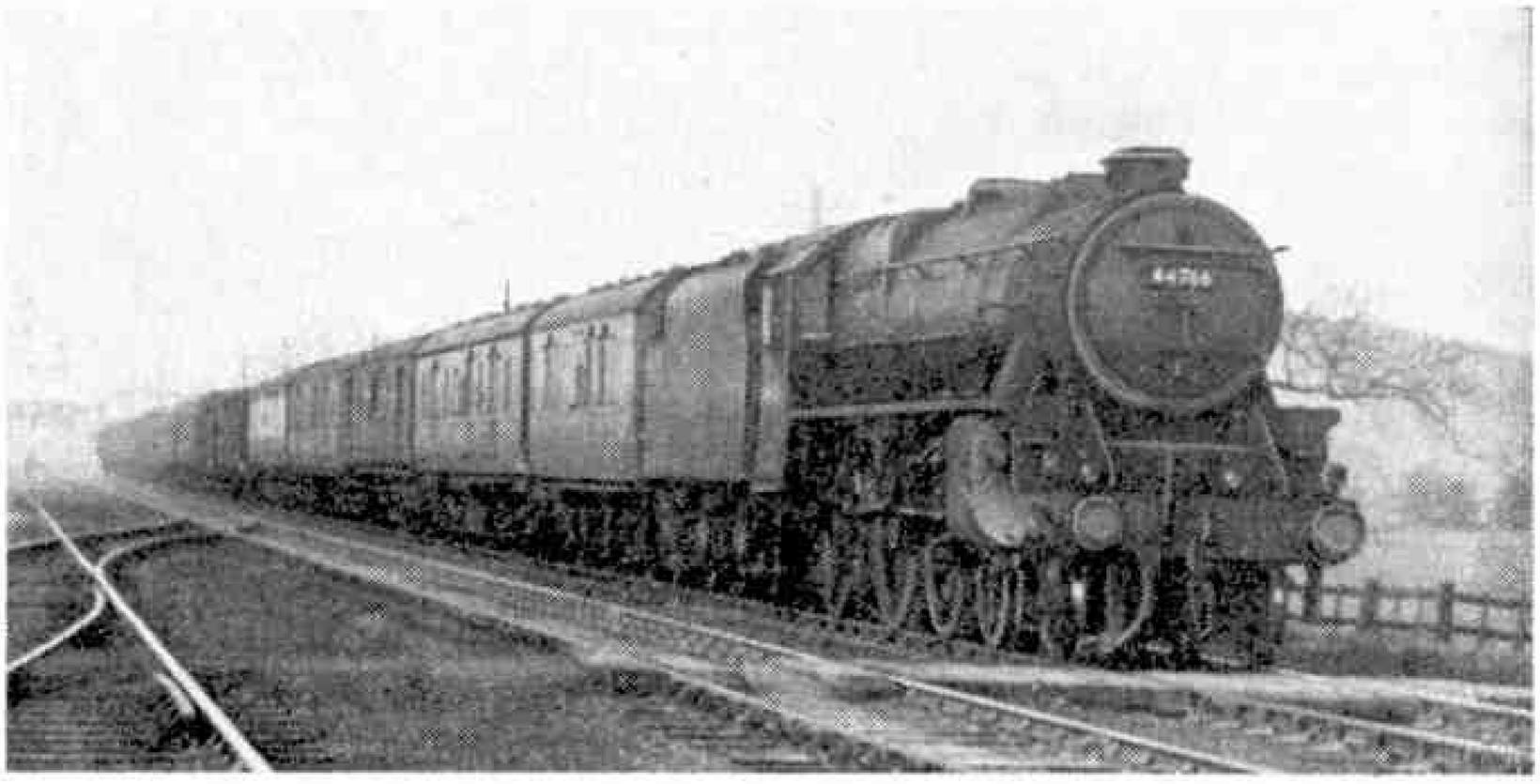
"THE HORSE AND CARRIAGE"

R. S. McNaught's articles on engine nicknames bring to mind the many train names used by railwaymen in their daily routine. One north-western freight train, the 5.7 p.m. Workington-Lancaster, has for many years been known as "The Bond," a name taken from a goods guard who once served on the old Furness Railway. Bond, the old stagers tell us, was a lordly figure. He stood six feet high and boasted a large handlebar moustache. His uniform was military in its neatness, and from all accounts its wearer was feared by all. His brake van was his special pride, and curtains were fitted across its windows. Although he died over 20 years ago his name has stuck to the train which he worked daily.

The 8.35 a.m. Carlisle–Crewe is a train composed for the most part of empty coaching stock, although it carries a small amount of milk and parcels traffic. To railwaymen this has always been "The Horse and Carriage," and so firmly rooted has been the nickname that until recently it has been marked in the railway Working Timetable as "H and C." In the early railway era it carried horse-boxes and carriages for the landed gentry whose mansions were situated near main line stations. The "coaching" traffic has long since disappeared, yet the name persists.

Other names are more obvious in their origin. The 4.30 a.m. Carlisle-Carnforth freight has always been the "Morning Star," and the last passenger train of the day from Preston to Barrow "The Whipper In"—often further abbreviated as "The Whip."

J. COULTHARD (Preston).



"The Horse and Carriage" approaching Wigan. Photograph by W. S. Garth.

A KIWI STORY

A short while ago I had the good fortune of seeing one of the world's most unusual birds. For although the kiwi is New Zealand's national bird, it is very rarely seen by the townspeople and it is uncommon in the back country bush where it lives. Occasionally a dog will catch one and bring it home, and sometimes opposum trappers catch them by accident. It was this latter fact that enabled me to see one. The kiwi had been caught by its three toes in a steel trap and its left leg had been broken in its violent struggle to escape. The trapper freed the bird and brought it 20 miles in a cardboard carton on the back of a motor cycle to a friend's home, in the hope that it would survive.

After a few days it became apparent that "Danny," as we called him, was not recuperating as we had hoped, so he was taken 12 miles to the nearest veterinary surgeon who, after a brief examination, amputated the broken leg. Then for about two months the children dug every spare inch of soil searching for earthworms, and regularly once a week the trapper appeared with a large fruit tin of huhu grubs for him, with the result that he gained rapidly in weight, health and strength. Then with Government approval—the kiwi is a protected bird—he was sent to the Auckland Zoological Gardens, where he was kept with another kiwi in an overgrown enclosure. With the aid of his beak he was agile enough to make it necessary for two keepers to chase him to display him once a week to the large crowds that gathered to see this curiosity of New Zealand's birdlife.

Danny, the one-legged kiwi, whose career is described on this page.

To everyone's sorrow he died several months later and a post-mortem found the cause of this still young bird's death to be heart failure!

As can be seen from the illustration, the bird is about the size of a domestic hen, is completely tail-less, and has only the merest suggestion of wings. It lays one, or occasionally two, white eggs, which are the largest laid by any bird in proportion to its size. The egg is laid in a hole or burrow beneath the roots of trees, where it is incubated by the male bird. The name of the bird comes from the shrill cry it utters whilst searching for food after dusk, for it is nocturnal.

R. D. RUTHERFORD
(New Plymouth, N.Z.)

Competitions! Open To All Readers

Prize-winning entries in M.M. competitions become the property of Meccano Ltd. Unsuccessful entries in photographic, drawing and similar contests will be returned if suitable stamped addressed envelopes or wrappers are enclosed with them.

An Interesting Slogans Competition

Most readers are interested in motor cars and motor cycles and, no doubt, are familiar with the coloured advertisements of these cars and machines displayed in dealers' windows and in periodicals. Generally these advertisements contain a saying, or slogan, that is always used in connection with that particular product. Our competition, suggested by Mr. R. P. Walford, of Newton Abbot, is based on these slogans.

In the panel on this page we give 12 of these slogans, in some cases incompletely, and we invite readers to identify the makes of car or motor cycle referred to and, where necessary, to fill in the gaps.

Competitors should write their answers in the form of numbered lists, giving the slogans in full and stating the make of car or motor cycle concerned where this is not revealed in the slogan, and in each case the name of the manufacturer. Every competitor should take care to put his name, address and age on each sheet of his entry.

1. **The Quality-First . . . .**
2. **As dependable as an . . . .**
3. **Leave it to your . . . .**
4. **. . . . for magnificent motoring.**
5. **The world's fastest standard motor cycle.**
6. **Safety fast.**
7. **The only British manufacturer producing four, twin and single cylinder motor cycles.**
8. **The famous . . . .**
9. **"Five-star" motoring.**
10. **Built like a gun.**
11. **The lively, likeable . . . .**
12. **It's a . . . It's a . . . . It's the best.**

There will be the usual two sections for Home and Overseas readers respectively, and in each prizes of 21/–, 15/– and 10/6 will be awarded for the best entries in order of merit. In addition consolation prizes will be given for other deserving efforts.

Entries should be addressed to *Slogans Contest, Meccano Magazine, Binns Road, Liverpool 13.* The closing dates are Home Section, 30th June; Overseas Section, 30th September.

Hidden Aircraft

For our second contest this month we turn to aeroplanes. The names of 12 types of British, American or Canadian aircraft have been hidden in the simple sentences below, and entrants are asked to find them.

1. "Don't be rash tonight," warned the boxing instructor.
2. To make matters worse, I never received her message.
3. Your best plan is to dovetail the pieces one into the other.
4. I saw sparks from the bonfire fly all over the place.
5. Some creatures seem equally at home on sea, land or in the air.
6. The solution of the mystery? It must be, averred the detective.
7. I have been asked to take command of the Corps on Saturday.
8. His explanation was unconvincing and most insolently given.
9. It was decided that another one would be sufficient.
10. Everybody agrees that the hunt erred in going through the churchyard.
11. He will come tearing along the road on his new motor bike.
12. It is not terribly difficult—when you know how.

Competitors are asked to identify the machines completely by giving in addition to the type, the nationality, maker's name and the duty or duties for which the machine concerned has been designed. Entries should be addressed to *May Aircraft Competition, Meccano Magazine, Binns Road, Liverpool 13.*

There will be separate sections for Home and Overseas readers, and in each of these prizes of 21/–, 15/– and 10/6 will be awarded, with consolation prizes for other efforts that just fail to attain prize-winning standard.

The closing date in the Home Section is 30th June and in the Overseas Section 30th September.

May Photographic Contest

The fifth of our 1953 series of photographic contests is a general one in which we invite readers to submit prints of any subject. Each competitor may submit only one photograph, which must have been taken by him, and on the back of his print must be stated exactly what the photograph represents, also his age must be given.

The competition will be in two sections, A for readers aged 16 and over, and B for those under 16. Each competitor must state in which section his photograph is entered. There will be separate Overseas Sections, and in each section prizes of 21/–, 15/– and 10/6 will be awarded. Entries should be addressed: *May Photographic Contest, Meccano Magazine, Binns Road, Liverpool 13.* Closing dates: Home Section, 30th May; Overseas Section, 31st August 1953.

Competitors who desire their entries to be returned should note the paragraph at the top of this page.

Competition Results and Solutions

HOME

DECEMBER 1952 GIFT VOTING CONTEST

1st Prize: A. Romanis, Edinburgh. 2nd Prize: M. Page, Hayes. 3rd Prize: R. Purvis, Glasgow. Consolation Prizes: R. Anderson, Liverpool 8; J. Peckham, Clapham; G. B. Jones, Liverpool 19; T. Orton, Blaby; A. A. J. Marley, Barnstaple; R. Smith, Minchinhampton.

DECEMBER 1952 ADVERTISEMENT CONTEST

1st Prize: G. W. A. Fogarty, Portadown, N.I. 2nd Prize: P. J. Brookman, Yeovil. 3rd Prize: J. Warren, Shrewton. Consolation Prizes: P. Heath, Oxford; P. White, Barry; B. E. Hillsdon, Farnborough; R. G. Dixon, Abbots Langley; K. McLaren, London S.W.20.

JANUARY 1953 COVER VOTING CONTEST

1st Prize: J. Wilde, Manchester. 2nd Prize: R. Atkins, Sandwich. 3rd Prize: D. Wall, Hayling Island. Consolation Prizes: D. Handby, Guildford; D. J. Ford, Tiverton; M. A. Gunner, Ascot; A. E. Greed, Bristol.

JANUARY 1953 WORD-MAKING CONTEST

1st Prize: D. M. Collison, London N.W.3. 2nd Prize: P. Lawton, West Bromwich. 3rd Prize: F. D. Mathews, London S.E.25. Consolation Prizes: J. Stones, Wolverhampton; C. E. Wrayford, Newton Abbot; F. Steele, Birmingham 30; M. J. Thompson, Bath.

JANUARY 1953 PHOTOGRAPHIC CONTEST

1st Prize, Section A: J. L. Springett, London S.E.20; Section B: N. C. Robson, Bakewell. 2nd Prize, Section A: M. E. Ware, Exeter; Section B: R. Bowyer, Great Sutton. 3rd Prize, Section A: C. H. Hart, Wembley; Section B: T. Kay, Edinburgh 7. Consolation Prizes, Section A: N. Horsfield, Whitley Bay; R. H. Taylor, Warrington; A. J. Noon, Sutton; W. Johnston, Chester; Section B: R. Plumbley, Liverpool 19; M. J. Blake, Sheffield 10; D. Marsh, Dalton-in-Furness; A. J. Woollard, Nottingham.

FEBRUARY 1953 PHOTOGRAPHIC CONTEST

1st Prize, Section A: R. K. Evans, Hessle; Section B: A. H. Waller, Loughton. 2nd Prize, Section A: W. R. Prince-Smith, Driffield; Section B: P. Bosson, Macclesfield. 3rd Prize, Section A: N. V. Salt, Newbury; Section B: A. J. Woollard, Nottingham; Consolation Prizes, Section A: R. R. Bushell, Hoddesdon; R. W. Hardy, Withernsea; J. Murphy, Glasgow C.4; P. Gossling, Brentwood; Section B: A. Campbell, Lincoln; A. D. Parkes, Hampton Poyle; C. R. C. Passmore, Edinburgh 4.

OVERSEAS

JULY 1952 PHOTOGRAPHIC CONTEST

1st Prize, Section A: R. A. Jermyn, Donnybrook, Irish Republic; Section B: F. Jensen, Copenhagen, Denmark. 2nd Prize, Section A: H. Ekwensi, Minna, Nigeria; Section B: S. Royden, Vancouver, Canada. 3rd Prize, Section A: K. Cooper, San Francisco, U.S.A.; Section B: T. S. Andrews, Bombay, India. Consolation Prizes: T. Yatawara, Avisawella, Ceylon; J. McCullagh, Dublin, Irish Republic; C. Beavan, Southampton, Bermuda; P. Leah, P.O. Wankie, S. Rhodesia; R. Ellmore, Sydney, Australia; P. Fernando, Colombo 13, Ceylon.

AUGUST 1952 AIRCRAFT CONTEST

1st Prize: D. E. Cooper, Bombay 7, India. 2nd Prize: G. Glamuzina, Auckland, N.Z. 3rd Prize: V. Duffy, Dublin, Irish Republic. Consolation Prizes: P. Cazaubon, Buenos Aires, Argentina; M. C. Mills, Rockhampton, Australia; J. C. Moore, Bahia, Brazil.

AUGUST 1952 TRAIN CONTEST

1st Prize: W. E. Tynan, Montreal, Canada. 2nd Prize: M. Potts, Bombay, India. 3rd Prize: W. A. Keay, Berne, Switzerland. Consolation Prizes: B. E. Cooper, Johannesburg, S. Africa; T. Bimpson, Waterford, Irish Republic; M. Janseen, Antwerp, Belgium.

AUGUST 1952 PHOTOGRAPHIC CONTEST

1st Prize, Section A: R. W. Jarman, R.A.F. Luqa, Malta, G.C.; Section B: L. F. Tyler, Hawke's Bay, N.Z. 2nd Prize, Section A: D. R. Baker, R.A.F. Khormaksar, Aden; Section B: I. Todd, Philadelphia, U.S.A. 3rd Prize, Section A: B. Biswas, Calcutta 37, India; Section B: P. Savva, Kandy, Ceylon. Consolation Prizes: W. T. Dutton, R.A.F. Bahrain, M.E.A.F. 24; I. A. Robertson, New Plymouth, N.Z.; A. Chowdhury, Shillong, India; R. Cobash, Madrid, Spain; F. S. Tunner, Oporto, Portugal.

SEPTEMBER 1952 ERRORS CONTEST

1st Prize: C. Randall, Herne Bay, N.Z. 2nd Prize: M. Tilliduff, Rondebosch, S. Africa. 3rd Prize: R. T. C. Harman, Christchurch, N.Z. Consolation Prizes: R. C. Dando, Greymouth, N.Z.; R. V. Richardson, Cobram, Australia.

SOLUTIONS

OCTOBER 1952 STATIONS CONTEST

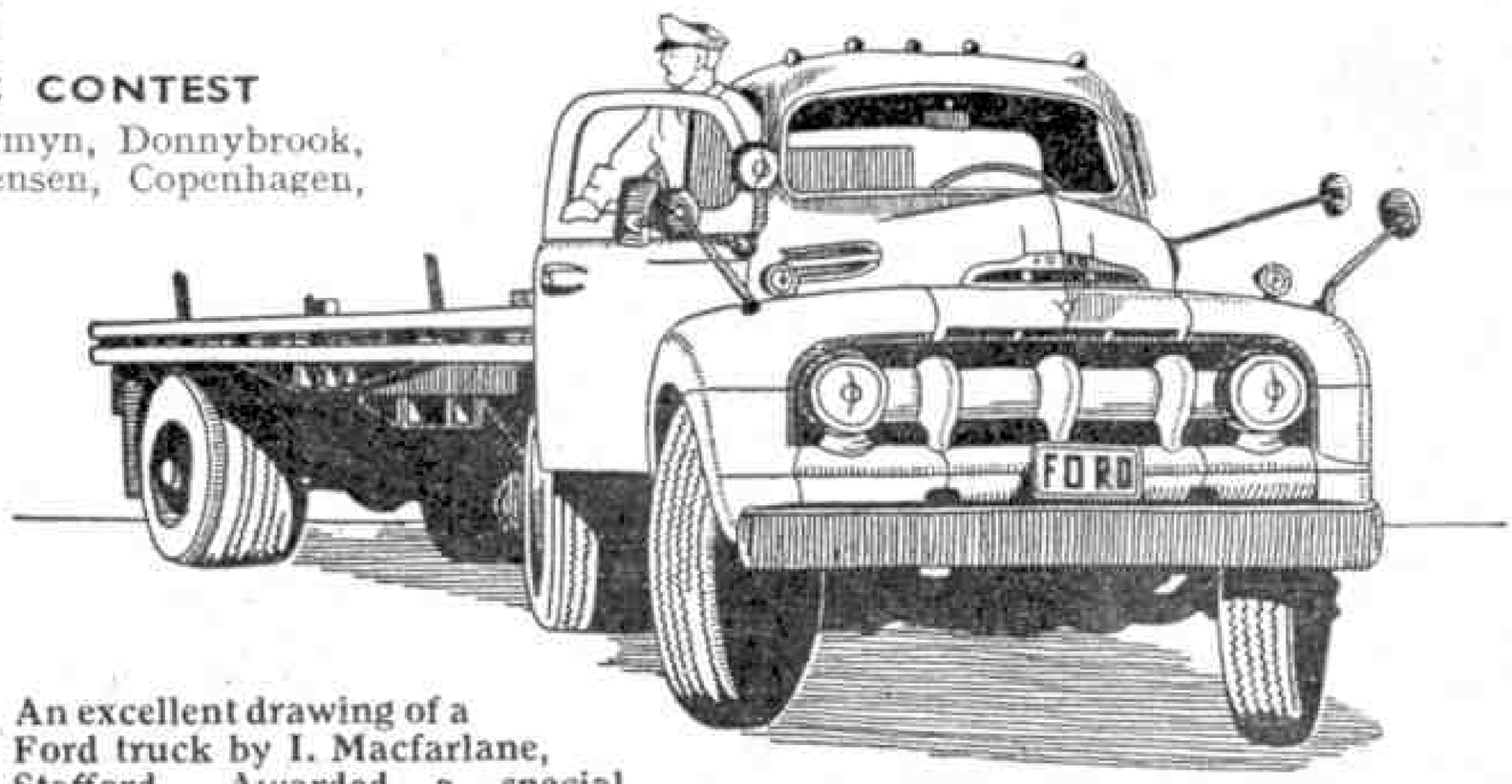
1. Hall Road. 2. Clock Face. 3. Twenty. 4. Broome. 5. March. 6. Bat and Ball. 7. Sandhills. 8. Woodland. 9. Wellington. 10. Nelson. 11. Gretna. 12. Rugby. 13. St. John's Chapel. 14. Old Street. 15. Fishponds. 16. Bugle. 17. New Mills.

DECEMBER 1952 ADVERTISEMENT CONTEST

Astra, Bayko, Beck, Bell, Campbell, Dunlop, E.M.I., ERG, Foden, Gem, Harbutts, Hornby, I.C.S., Keef, Lott's, Lucas, Malins, Meccano, Spear, Warne, Webley, Wolsey.

DECEMBER 1952 GIFT VOTING CONTEST

1. Bicycle. 2. Model Steam Engine. 3. Building Set. 4. Microscope. 5. Chemistry Set. 6. Fretwork Outfit. 7. Model Aeroplane. 8. Pedal Car. 9. Cowboy Outfit. 10. Plasticine.



An excellent drawing of a Ford truck by I. Macfarlane, Stafford. Awarded a special editorial prize in the November 1952 Drawing Contest.

Fireside Fun

"Please, are you the Colonel?"

* * * *

"Would a palmist or a mind reader be best for me?"
"Oh, the palmist. You certainly have a palm."

* * * *

"Here, waiter, there's a fly swimming in my soup."
"Don't exaggerate, sir. The fly's dead."

* * * *

"Show me the nearest way to the hospital, my man."
"Poke me in the back again with that there stick and you'll be there in no time."

BRAIN TEASERS

INCREASED SPENDING MONEY

The vicar decided to give a party to the boys of an orphanage, and to give each orphan 3d. to spend. When the orphans arrived there were 10 more than expected, so the vicar added 10/- to the amount he had already arranged to give so that he could give each of the newcomers 3d., and also give every orphan an extra penny. How much did the vicar spend? H.B.

* * * *

ARMS, LEGS AND CHINS

Here are clues for words in three groups. Those of the first group contain the word ARM, those of the second LEG and those of the third CHIN. What are the words?

ARM GROUP: 1, Dress; 2, Warning; 3, Bright red; 4, Spread on bread and butter.

LEG GROUP: 5, Place of learning; 6, Graceful; 7 Fable; 8, Favour granted.

CHIN GROUP: 9, Does work; 10, Walking like soldiers; 11, Cups and saucers; 12, Mischievous boy. S.W.C.

* * * *

"Now read me the fourth line from the top."
"I can't."
"Come, come. It's quite easy. Try again."
"Oh, I can see it all right, but I can't pronounce the word."

* * * *

SOLUTIONS TO LAST MONTH'S PUZZLES

The four names of girls in our first puzzle last month were Alice, Beryl, Cherry and Evelyn, and the boy's name was Daniel. In the third and fourth columns of the diagram therefore came the two names Irene and Cyril.

The least number of coins required to pay any sum between halfpenny and 6/- is eight, and they would be as follows: a halfpenny, two pennies, a threepenny bit, a sixpence, a shilling and two florins.

In our diamond puzzle the clues across give the numbers 144, 9, 20, 120 and 3. The one clue down given yields the number 44. Puzzlers of course would easily realise that figures were required to make up the diamond.

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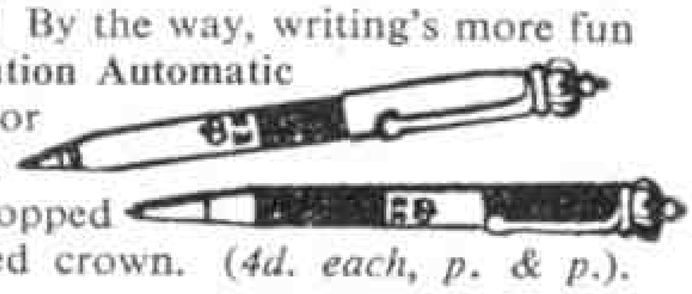
Play "Crown the Queen," exciting Coronation card game. The pack costs 5/6, *p. & p. 4d.*

Write at once! By the way, writing's more fun with a Coronation Automatic Pencil (4/11) or Ball Point Pen (3/11), each topped with a jewelled crown. (*4d. each, p. & p.*).



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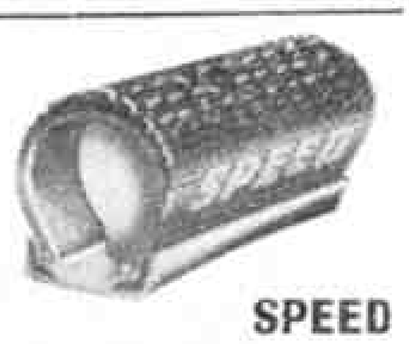
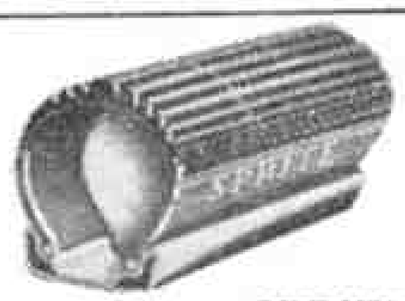
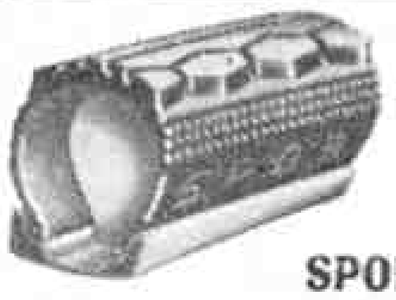


SPEED

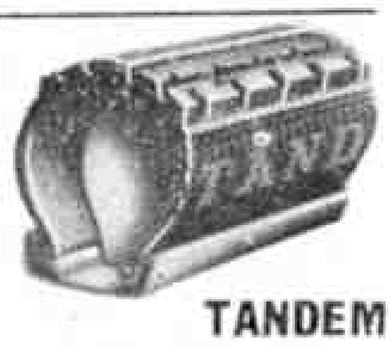
SILVER SPRITE



SPRITE

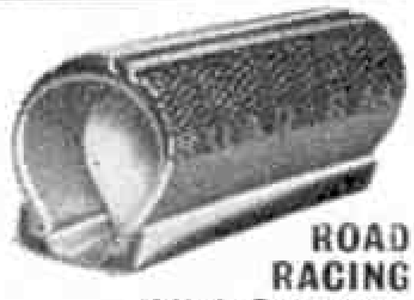


SPORTS

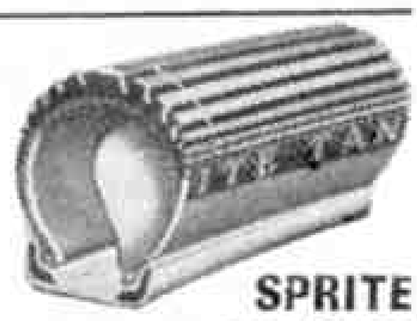


TANDEM

ULTRA LIGHT ROAD RACING (*High Pressure*)



ROAD RACING (*High Pressure*)



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By E. Rankine Gray **Price 6d. (by post 7½d.)**

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By E. Rankine Gray **price 3/6 (by post 3/9)**

The record-breaking textbook (now in its ninth edition) deals more specifically with the construction of various types of goods venicles, from the single open wagon to the complex Low Siphon Milk Van, telling how perfect models can be made, correct to the smallest detail.

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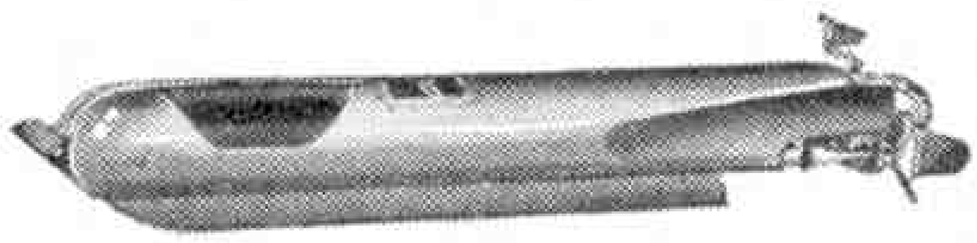

This power-driven watercraft, incorporating its own mechanical winding-gear has a range of up to 30 feet and produces a most realistic effect on impact with its target. The Torpedo-head is quite harmless and is released by a simple spring action.

Overall length 10" — supplied complete with spare power-bands and lubricant—it provides endless fun for all ages.

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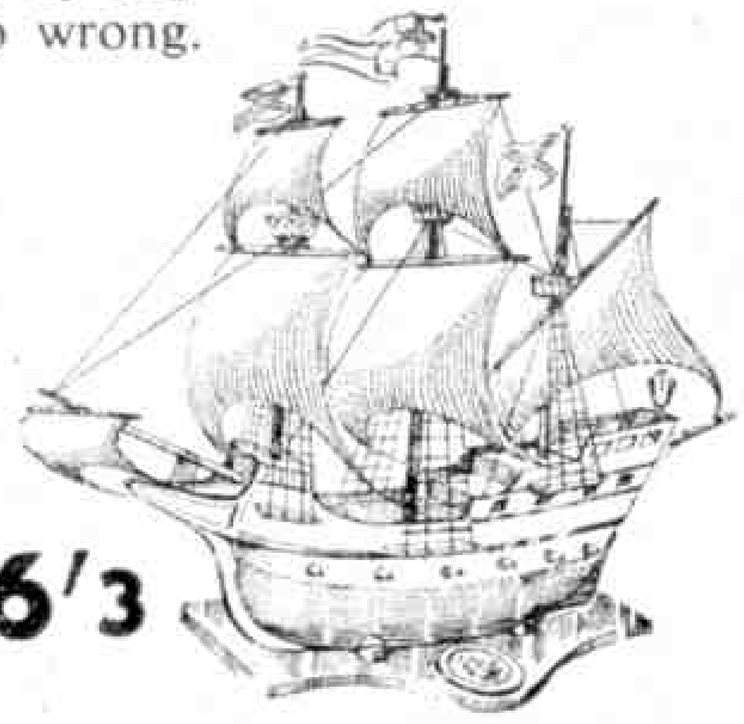

THE ½d. GALLEON
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THIS MONTH'S OFFERS

BY **ELECTRADIX** *ESTD. 1920*

CRYSTAL SETS for summer Camps, the 1953 model in black bakelite case, 6 in. x 4½ in. x 1¾ in., fitted var. condenser, diode detector needing no adjustment, litz wound coil transformer for 'phones; headphones fitted headband, cord and plug, **30/-**, post 2/6.

GEAR BOXES, right hand cross drive, 17/1, die cast with plastic pulley and four hole fixing, **3/6**, post 6d.

PERISCOPES. Beautifully made precision instruments, ex. W.D. Model in aluminium case, 3½ in. x 4½ in. x 1½ in. each, fitted two angle prisms. Can easily be extended by metal or wood strips to the height required, **6/3** per pair, plus 1/9 post.

TRANSFORMERS, double wound, 230 volts 50 cycles input, 12 volts 8 amps. output, **30/-**, post 2/-. Auto transformers, 230 volts 50 cycles input, 110 volts 85 watts output, **27/6**.

MOTORS. 24 volts D.C., new Govt. stock, beautifully made, totally enclosed, 1/25 H.P., **15/-**, post 2/-; will work off A.C. 230 volt mains through transformer 230/50 volts.

MORSE KEY and Buzzer for Practice. A.M. type precision made Morse Key, **3/6**, post 9d. Buzzer in bakelite case, good loud note, **2/6**, post 6d. Morse Practice Set on base with key and Buzzer, with space for battery, **6/6**, post 1/-.

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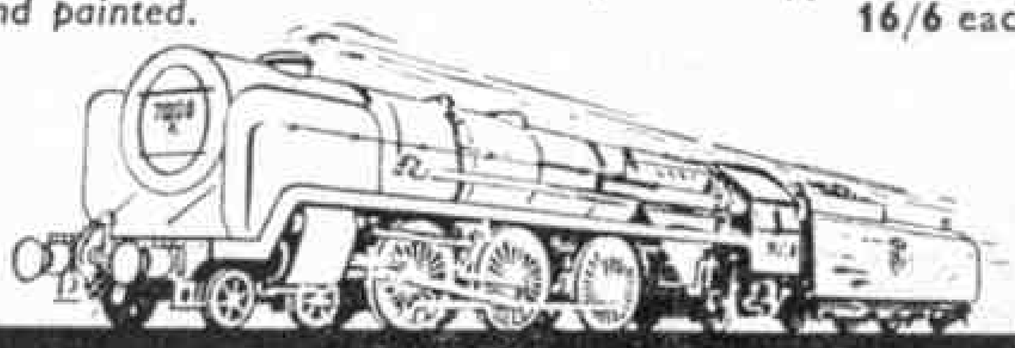

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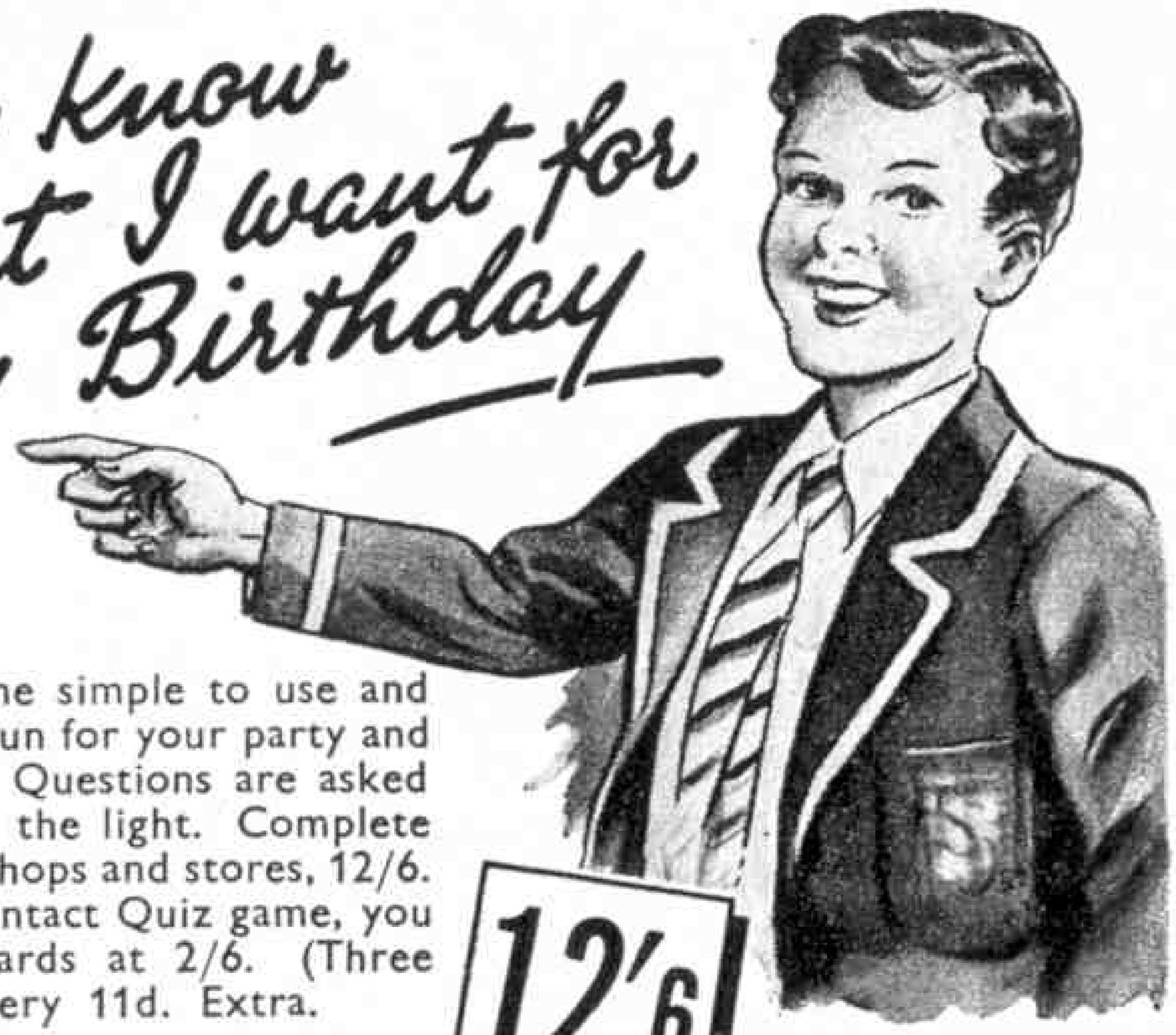

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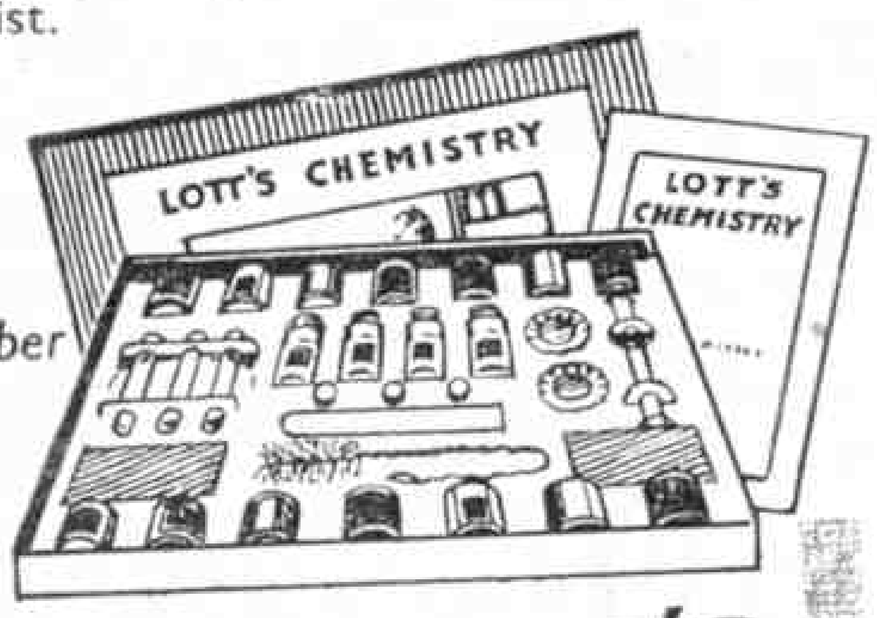

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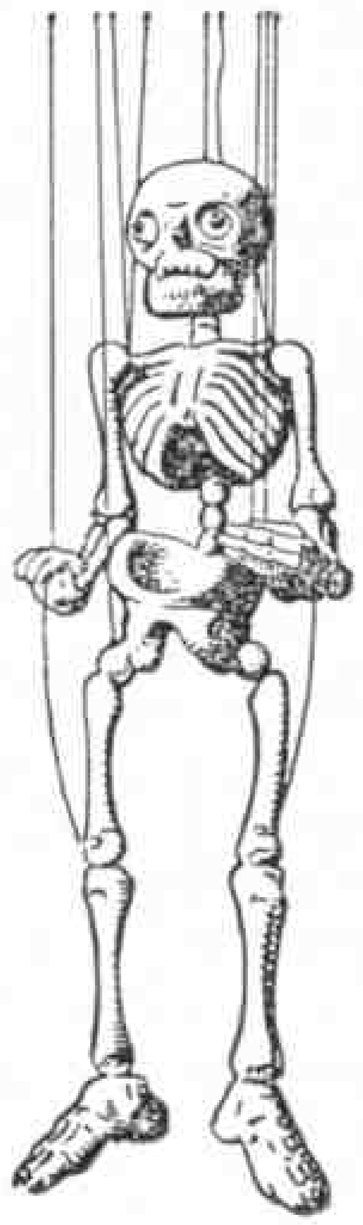

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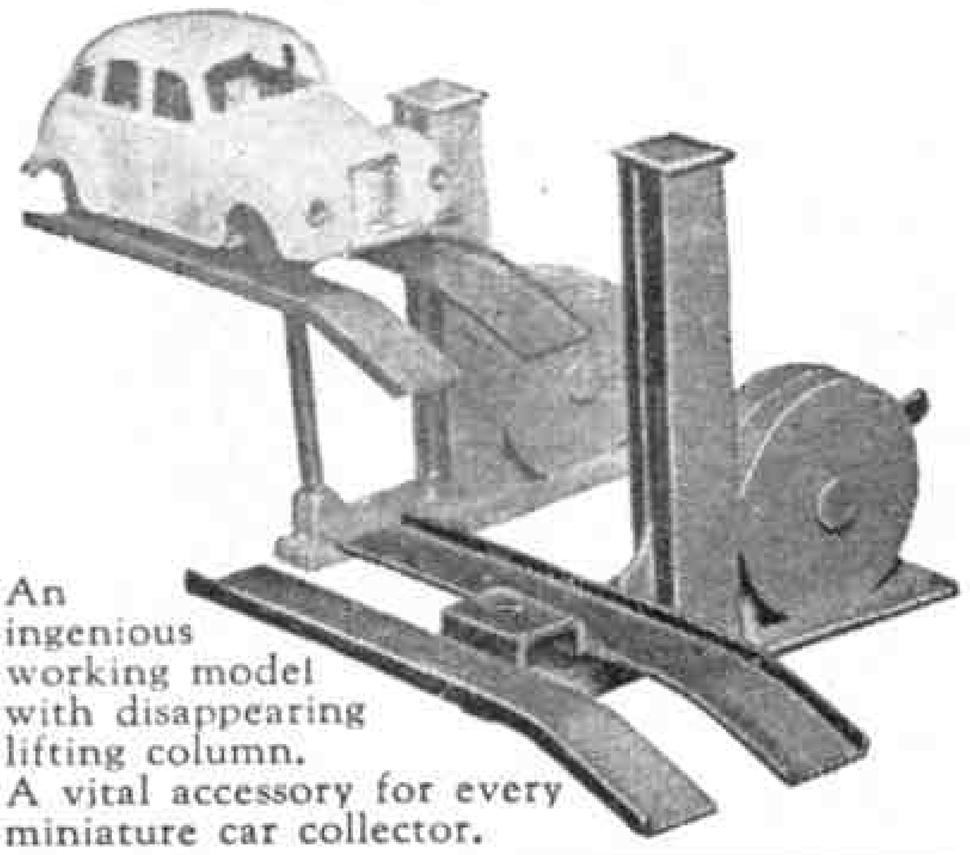

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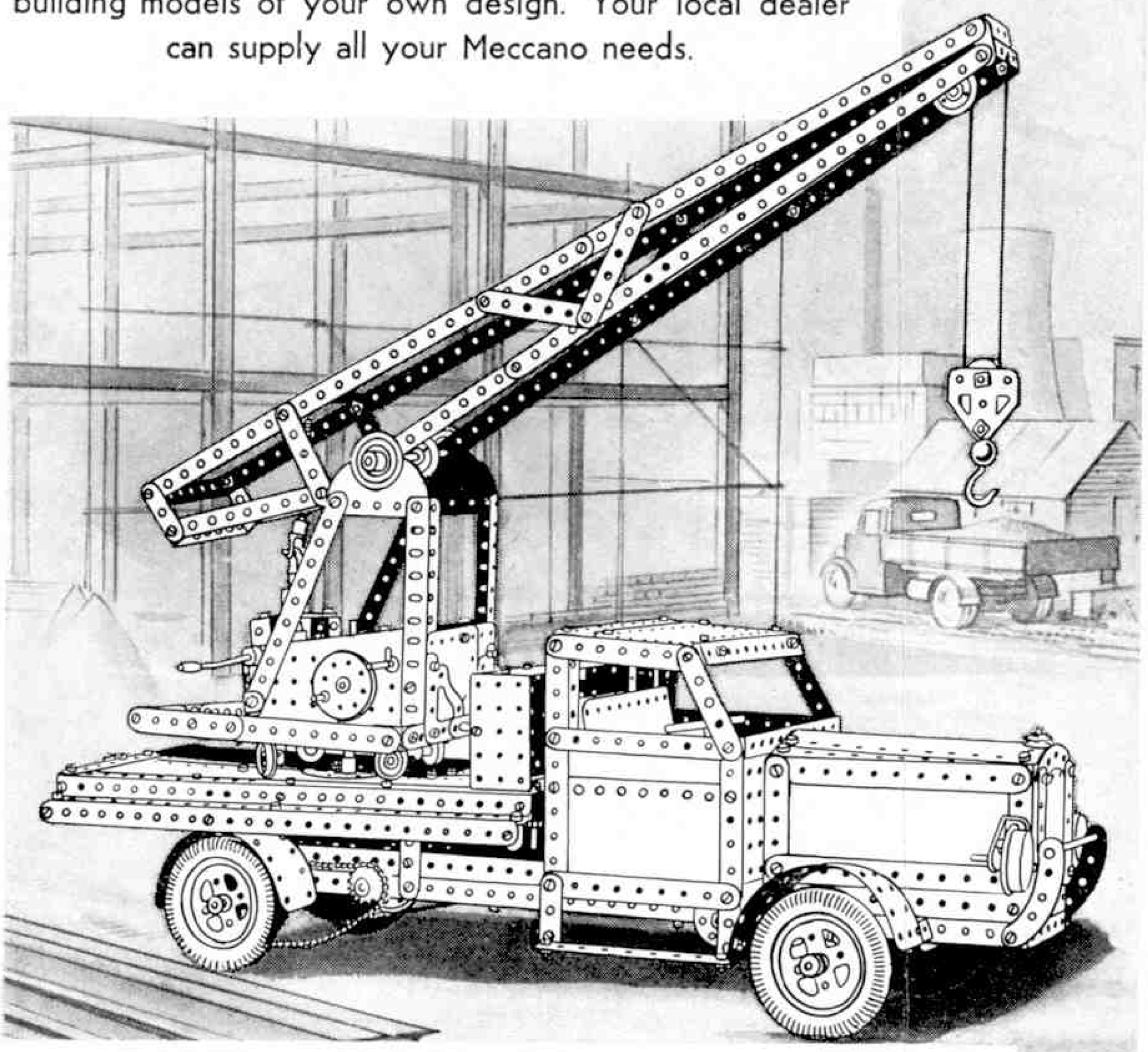

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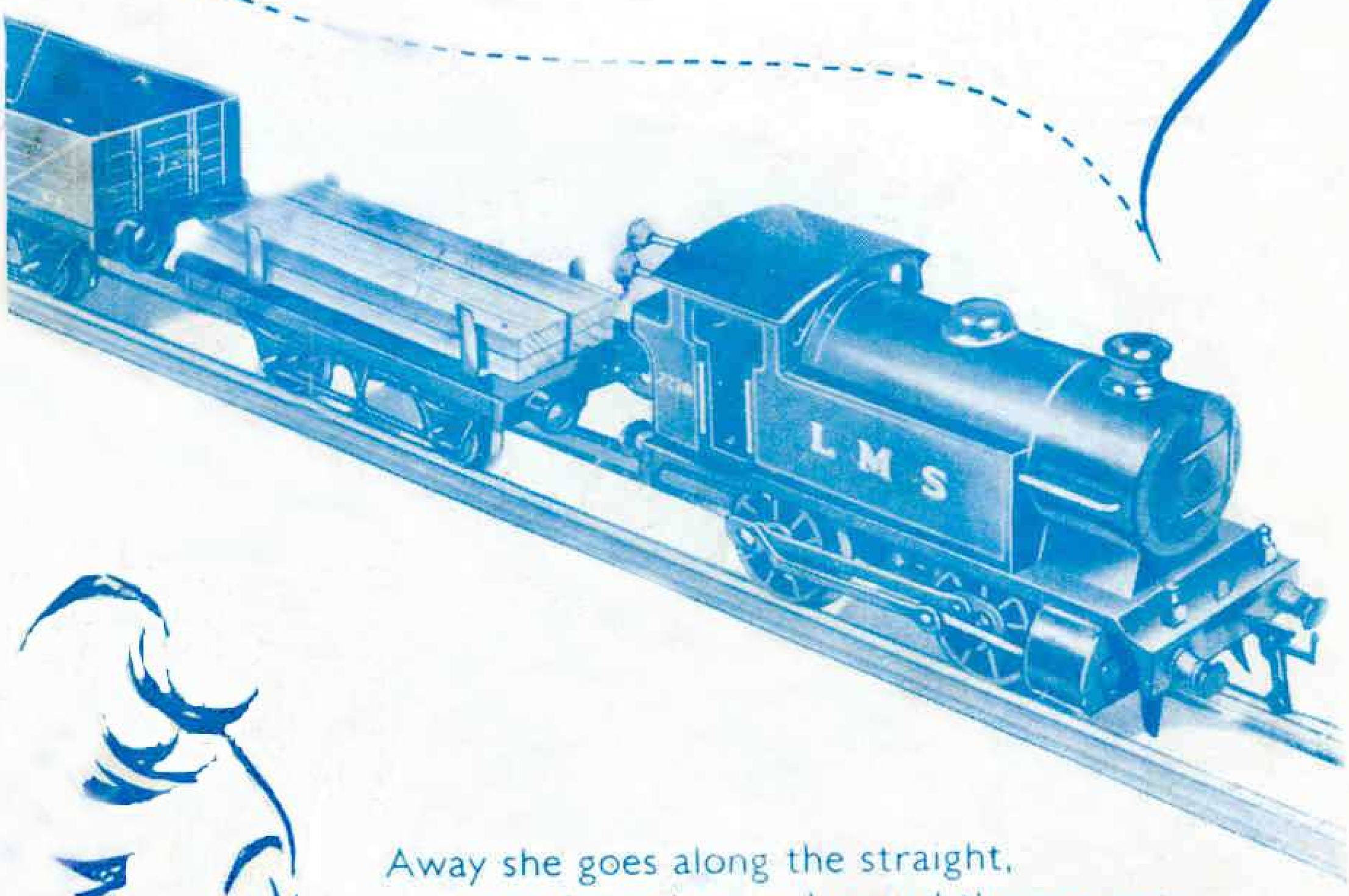
trust me to run to time!



Away she goes along the straight,
over the points and round the curve—
no wonder boys find endless delight
in Hornby Trains. Hornby locomotives,
track, rolling stock and accessories are
all of sturdy construction and last for
years. Ask your dealer to show
you the Hornby Passenger and
Goods Trains.

HORNBY *Clockwork* TRAINS

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